APPENDIX G

U.S. DEPARTMENT OF ENERGY BASIC FIREFIGHTER CERTIFICATION PROGRAM

This page intentionally left blank.

CONTENTS

This page intentionally left blank.

APPENDIX G

U.S. DEPARTMENT OF ENERGY BASIC FIREFIGHTER CERTIFICATION PROGRAM

The Basic Firefighter Certification Program will meet or exceed the Firefighter II level as identified in the National Fire Protection Association (NFPA) 1001 training requirements and is a performance-based document. The Basic Certified Firefighter shall be an operative firefighter requiring an expected level of supervision.

The U.S. Department of Energy (DOE) Basic Firefighter Certification program consists of three training components with two optional emergency medical certifications. The following are the required components of the program:

- NFPA Firefighter II Certification training
- Hazardous Materials (HAZMAT) First Responder training
- Site-specific training.

The Firefighter II program will meet or exceed the standards and requirements of NFPA 1001. Most states have a certification program in place that will meet or exceed these requirements. The Firefighter II training shall be per the certification program of the state where the facility is located if the state program meets or exceeds NFPA 1001 requirements. If the DOE facility is located in a state with no program, or with a program that does not meet or exceed the NFPA 1001 requirements, the DOE Firefighter II Instructor Reference Manual (Appendix B) shall be used as the guideline for a structured training program for recruited firefighters (candidates).

The HAZMAT First Responder training is a structured 40-hour program based on Department of Transportation (DOT) standards and guidelines.

The site-specific training shall cover any special hazards and conditions that may be found on the site as well as security access limitations. It is recommended that this training be a structured program of no less than 40 hours with both a written and practical examination on completion of the course.

This document outlines the basic level of competency required for those manual firefighting forces protecting DOE property regardless of how that service is provided.

It is recognized that local equipment and conditions may require that some specific functions be modified.

Optional requirements:

- Emergency medical technician (EMT) certification
- Paramedic certification

If the DOE facility fire department provides ambulance service for the facility, then there will be additional certifications required for the

firefighters. If the ambulance functions only as a basic life support unit (no drugs, telemetry, or defibrillator), then the EMT-A certification is required. This class varies for different locations, but the basic DOT course is usually about 120 hours long and requires both a written and practical exam for the certification. EMT-A personnel must recertify every 2 years.

If the ambulance service will be an advanced life support unit, then paramedic certification is required. This training can vary from as little as 400 hours to as much as 750 hours depending upon the requirements of the hospital responsible for the DOT paramedic program in your area. There are also substantial continuing education requirements to maintain certification.

Many technical schools and 2-year colleges around the country provide state certification courses for Firefighter II, EMT-A, paramedic, and HAZMAT First Responder. These courses usually meet the NFPA Firefighter II, DOT EMT-A and paramedic, and DOT HAZMAT First Responder requirements. Because of this, many DOE facilities may have the option of requiring certification and training before employment. This will eliminate the need for the extensive 300-hour Firefighter II and HAZMAT First Responder programs to be given on site after the candidate is hired. It will also eliminate the 2-6 months of training, usually requiring overtime compensation, for EMT-A and paramedic certification.

Remember, although the DOE Fire Department may be smaller and have less responses than its municipal counterpart, the training requirements and level of competence are greater than the municipal counterparts because of the site-specific hazards that may be encountered during an emergency response. For this reason, these minimum requirements are established to provide for the safety of the community, DOE employees, and firefighters who will respond to site emergencies.

G.1 U.S. DEPARTMENT OF ENERGY FIREFIGHTER II CERTIFICATION PROGRAM REQUIREMENTS

G.1.1 Prerequisites for Program Candidates

A candidate for the Firefighter II certification program must be employed as a firefighter candidate, recruit, or trainee by the emergency response organization responsible for providing fire protection for the facility. Before entering the practical portion of the training program, the candidate shall have taken and passed a complete physical examination including an analytical back X ray, lung capacity evaluation, and stress test.

The candidate must have the following qualifications:

- High school graduate, or equivalent
- At least 21 years old
- Vision correctable to 20-20

- No physical defects (such as chronic back problems, partial amputation or disability of an arm, hand, or leg) that would affect the candidate's ability to perform the physically demanding aspects of the position

- 5 ft to 6 ft 6 in. tall, weight proportionate to height (tall enough to ride in and remove equipment from fire engine)

- Not claustrophobic (necessary for working in confined spaces and using a self-contained breathing apparatus [SCBA] in a low-visibility environment)

- High moral and ethical standards

- Pass a psychological screening test.

G.1.2 Instructor Requirements

The Firefighter II and HAZMAT First Responder courses shall be supervised by a Certified Fire Service Instructor, a person who has attended and passed Educational Methodology I and II at the National Fire Academy, or a person with a state teaching credential.

The actual instructors may not be certified instructors, but shall be technically competent, preferably with teaching experience. There shall be class outlines and/or study guides that provide detailed information on the content and expected outcome of the class.

EMT-A and paramedic courses require that DOT certified instructors teach the course (there may be assistants who are not certified).

G.1.3 Facility Requirements

The classroom of the facility will not be subject to the noise and activity of the fire station (no station alarm, radio monitor, etc. in the classroom). Facilities should allow for the safe activities of the certification program. A fire training tower would provide the ideal environment, but <u>all</u> of the following provide acceptable alternatives:

- A three or more story building (with off-street parking for fire engine and a limited access area for evolutions) that can be used for ladder access

- Ground level roof and window assembly mockups for ventilation and forcible entry evolutions with manual (axes, pike poles, etc.) and power tools (chain saws, partner saws, etc.)

- A building that can be used for search and rescue in a simulated smoke-filled environment

- A building that can be burned or burned in for live fire training, or documented access to such a facility.

G.1.4 Curriculum Requirements

The curriculum for the Firefighter II program consists of a course or series of courses covering knowledge and skill objectives with a depth of coverage as listed in NFPA 1001, Chapter 4. This standard is incorporated by reference and includes no later standards or editions.

The curriculum for the HAZMAT First Responder program consists of a course covering knowledge and skill objectives with a depth of coverage as listed by the DOT.

The curriculum for the site-specific training consists of a course or series of courses covering knowledge and skill objectives as they pertain to specific hazards and security for the specific facility.

The following shows the primary subject areas and manual references for the Firefighter II training program. The training program should be developed in a modular format, with each subject area as a separate module. This type of format will allow the teaching facility to provide the sequence of training in the order that is most expedient. Complete practical evolution testing can be accomplished at the end of each module, but the written test and a practical "spot check" test will occur at the end of the course.

Subject Areas	International Fire Service Training Association (IFSTA) Reference Manual	Chapter
General/orientation	IFSTA Orientation, 2nd Ed.	3, 4, 6, 8
Fire behavior	IFSTA Essentials, 2nd Ed.	1
Portable fire extinguishers	IFSTA Essentials, 2nd Ed.	2
Tools and equipment	IFSTA Essentials, 2nd Ed.	10, 6
SCBA	IFSTA Essentials, 2nd Ed.	4
Ladders	IFSTA Essentials, 2nd Ed.	5
Fire hose, nozzles, and appliances	IFSTA Essentials, 2nd Ed.	10
Personal safety	IFSTA Essentials, 2nd Ed.	7, 11, 12, 14
	IFSTA Orientation 2nd Ed.	6
Ropes and knots	IFSTA Essentials, 2nd Ed.	3
Emergency medical care (basic first aid)	IFSTA First Responder 1st Edition	2, 4, 5, 6, 7 9, 13
Water supply	IFSTA Essentials, 2nd Ed.	8
Forcible entry	IFSTA Essentials, 2nd Ed.	6
Overhaul	IFSTA Essentials, 2nd Ed.	12
Fire streams	IFSTA Essentials, 2nd Ed.	9
Ventilation	IFSTA 105, 6th Edition	1, 3, 4
Rescue	IFSTA Essentials, 2nd Ed.	11
Communications	IFSTA Essentials, 2nd Ed.	15
Ventilation	IFSTA Essentials, 2nd Ed.	16
Salvage	IFSTA Essentials, 2nd Ed.	12
Fire inspections	IFSTA Essentials, 2nd	17

	International Fire Service Training Association (IFSTA) Reference	
Subject Areas	Manual	Chapter
	Ed.	13
Fire cause and origin	IFSTA Essentials, 2nd Ed.	
HAZMAT	IFSTA Haz. Mat. 1st Ed.	1, 2

The IFSTA Essentials Manual (200), 2nd Edition, is the primary reference for Firefighter II training. Each candidate should have his/her own copy of this manual during the Firefighter II training course.

The Instructor Reference Manual in Appendix B is the basis for course development and lesson plans.

U.S. DEPARTMENT OF ENERGY FIREFIGHTER II CERTIFICATION PROGRAM
INSTRUCTOR REFERENCE MANUAL

This page intentionally left blank.

The attached general instructional objectives, specific learning outcomes, and sample practical exams have been prepared to support educational activities designed to train fire service personnel to the Firefighter II level. Each objective is a statement of the skills and/or knowledge a person must achieve to attain this level of certification, whether through a state certification program or DOE facility program.

NFPA 1001 has been used as a minimum criteria. Instructional objectives and learning outcomes have been referenced to this standard, when appropriate.

Written examinations, quizzes, and performance evaluations should be correlated and referenced to specific learning outcomes or objectives. The final practical evaluation shall be given and graded by the agency providing the training. The written examination shall be requested from DOE _____ at least 30 days before the scheduled exam date. The exam will be given and proctored by the Human Resources Section of the affected DOE facility or the agency having responsibility for the facility. The exam shall then be returned to DOE _____ _____ to be graded. Results will be forwarded to the fire chief or his/her designate of the facility fire department.

A score of 70% or greater is required to pass each section of the exam. If it is necessary to retake any portion of the written exam, a reexamination may be requested from DOE _____ a minimum of 90 days after the original examination was taken. Anyone failing the same section twice will not be certified.

This page intentionally left blank.

CONTENTS

Firefighter I and II

This page intentionally left blank.

Section: General/Orientation (NFPA 1001, 3-1 and 4-1)

Goal Statement: On completion of this subject, the student must fulfill the following objectives and identify all reference materials used in the training program.

1. Identify the various ranks and general duties assigned to personnel in the fire department. (NFPA 1001, 3-1.1)

2. Identify the scope of services provided by the fire department. (NFPA 1001, 3-1.2)

3. Identify sources, and obtain and review standard operating procedures for Firefighter II. (NFPA 1001, 3-1.2)

4. Obtain and review rules and regulations that pertain to the position of firefighter. (NFPA 1001, 2-1.3)

5. Identify all training resources record keeping and testing procedures as they apply to the firefighter.

6. Identify the safety and security restrictions of the training facility, fire engine, and tools.

7. Define terms related to identification, use, and function of fire engine; fire department facilities; common types of installed fire protection systems; and fire ground maneuvers.

8. Identify state and local government agencies and their roles in fire protection.

9. Identify sequence of events and operations from receipt of alarm to critique.

( ) Indicates reference to NFPA 1001.

This page intentionally left blank.

Section: Fire Behavior (NFPA 1001 4-4 and 5-4)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Define the following terms:

   1.1 Fire (3-4.1)

   1.2 Heat

   1.3 Temperature

      a) Fahrenheit scale (4-4.1b)

      b) Celsius scale (4-4.1c)

   1.4 Ignition temperature (3-4.8)

   1.5 Flammable limits

   1.6 Flash point (3-4.8)

   1.7 Fire point (3-4.8)

   1.8 British thermal unit (4-4.1a)

   1.9 Calorie (4-4.1b)

   1.10 Law of specific heat

   1.11 Latent heat of vaporization

2. Identify the components of the fire triangle and fire tetrahedron. (3-4.2)

3. Identify the affect of oxygen concentration on fire. (3-4.9)

4. Identify chemical, mechanical, and electrical heat sources. (3-4.3)

5. Identify products of combustion which create life hazards. (3-4.10)

6. Identify the hazard of finely divided fuels as they relate to the combustion process. (3-4.7)

7. Identify four classes of fire as they relate to the type of fuel. (4-5.1)

8. Identify three methods of heat transfer. (3-4.5)

   8.1 Law of heat flow

9. Identify the three physical stages of matter in which fuels are commonly

found. (3-4.6)

10. Identify the following terms as they relate to a structural fire:

10.1 Flame spread (3-4.4b)

10.2 Steady state (3-4.4e)

10.3 Thermal balance and imbalance (4-4.2)

10.4 Incipient stage (3-4.4a)

10.5 Free-burning stage

10.6 Smoldering stage (3-4.4d)

10.7 Flash over (3-4.4d)

10.8 Back draft (3-4.6)

10.9 Clear burning (3-4.4f)

( ) Indicates reference to NFPA 1001.

Section: Portable Fire Extinguishers (NFPA 1001, 3-5 and 4-5)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify the common types of fire extinguishers carried on fire engines according to NFPA 1901.

2. Identify the symbols and color coding of the fire extinguisher rating system.

3. Identify the operating characteristics of the extinguishers carried on a fire engine equipped according to NFPA 1901.

4. When given a representative group of different classes of fire extinguishers, the firefighter shall identify the appropriate extinguisher for a stated class of fire. (4-5.2).

5. Explain the portable fire extinguisher rating system. (4-5.3)

6. Explain the operation of all commonly available fire extinguishers and agents.

7. Demonstrate the extinguishment of a Class A and Class B fire. Where permitted, live fire situations are to be used. (4-5.4)

8. Identify common defects such as would be found during a visual inspection of a fire extinguisher.

( ) Indicates reference to NFPA 1001.

Sample Practical Exam for Portable Fire Extinguishers (NFPA 1001, 3-5 and 4-5)

1. The firefighter standing in front of a pumper, given the class of fire, shall select, remove, and place the proper extinguisher in front of the pumper within 45 seconds.

2. Select the correct fire extinguisher type and size for a class "A" or "B" test fire and demonstrate extinguishing the fire within 45 seconds in accordance with the situation and test fires as described below.

   2.1 Wind condition where prevailing winds do not exceed the 10 mi/h (and adversely affect free burning).

   2.2 The fire extinguisher is to be located 30 ft from the test fire(s) and where the student shall begin the test.

   2.3 Test first to be in a free-burning state, i.e., 2 1/2 minutes for Class "A," 30 seconds for Class "B," or sufficient free-burning time to ensure complete test fire area involvement.

   2.4 A test fire of the following type and dimension:

      a) A deep-seated, Class "A" fire at least 3 ft square, lying flat, and at least 2 in. deep.

      b) A flammable liquid fire using a container at least 3 ft long, 1 ft wide, and 3 in. deep, with a minimum of 1 in. of water and 1 gal of flammable liquid.

( ) Indicates reference to NFPA 1001.

Section: Tools and Equipment

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify and describe the purpose of all hand and power tools, hose appliances and adapters carried on an NFPA 1901 standard pumper, tanker, aerial, and salvage and rescue apparatus.

2. Locate, remove, and safely carry hose and tools from a standard pumper to a designated point 30 ft from the fire engine. Return and remount all tools, hose appliances, and adapter carried on the fire engine in the specified time for each item.

3. Demonstrate safe use of all tools, hose appliances, and adapters carried on a standard pumper apparatus.

4. Identify common defects affecting serviceability and safety of hand tools, hose appliances, and adapters carried on a pumper. Describe the measures needed to correct the associated defects.

5. Identify the equipment used to provide lighting at the scene of an incident. (3-11.4)

6. Demonstrate the safe connection and use of lighting equipment used at the scene of an incident. (3-11.5)

7. Demonstrate the starting, operation, and maintenance procedures of electric power generation devices used at the scene of an incident. (3-11.6 and 4-1.4)

( ) Indicates reference to NFPA 1001.

Sample Practical Exam for Tools and Equipment

1. The firefighter, given a command while standing in front of a standard pumper, shall locate, remove, and safely carry the specified tools, appliance, accessory, or piece of equipment to a point at least 30 ft in front of the fire engine and return it to its mounting on the fire engine.

2. The firefighter shall demonstrate the use of selected tools.

3. The firefighter, given a tool, accessory, appliance, or piece of equipment found on a standard pumper, shall identify component parts, specify common defects affecting serviceability, and demonstrate or describe corrective measures as prescribed by department policy, IFSTA manuals, or manufacturer's technical data.

4. The firefighter, given an electrical generating device, supplies, and lighting equipment, shall start the generating device and place the lighting equipment in operation 100 ft from the generator.

Section: Self-Contained Breathing Apparatus (NFPA 1001, 3-6 and 4-6)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Know respiratory hazards. (3-6.1)

   1.1 List four major respiratory hazards and their impact on the human body.

2. Knows SCBA parts and terminology.

   2.1 Identify from actual equipment or diagram the basic parts of an SCBA unit.

   2.2 Describe the operating principle of certain types or parts of an SCBA unit.

3. Identify the physical requirements of the wearer, limitations of the SCBA, and safety features of all types of SCBA. (3-6.3)

4. Demonstrate donning and doffing of SCBA while wearing full protective equipment. (3-6.4)

   4.1 Don 30- to 60-minute demand-type SCBA from case or holder according to manufacturer's recommendations or as illustrated in IFSTA Essentials.

5. Demonstrate the use of all types of SCBA used by the firefighter's department. (3-6.2)

6. Demonstrate or identify the procedure for cleaning and sanitizing the SCBA using approved manufacturer's procedures. (3-6.6)

7. Know procedures for daily inspection and maintenance of SCBA. (4-6.1)

   7.1 Describe and demonstrate the daily inspection procedures for the following components of SCBA according to manufacturer's recommendations or procedures illustrated in IFSTA Essentials:

      a) Air cylinder
      b) Carrying harness
      c) Regulator
      d) Facepiece

8. Demonstrate procedures for recharging and exchanging air cylinders. (4-6.2)

   8.1 Demonstrate air cylinder exchange while SCBA is on another firefighter according to procedures discussed in class or illustrated in IFSTA Essentials.

   8.2 Demonstrate air cylinder exchange while SCBA is off firefighter

according to procedures discussed in class or illustrated in IFSTA Essentials.

8.3 Demonstrate proper procedures for recharging air cylinders used by the fire department according to manufacturer's recommendations or procedures outlined in IFSTA Essentials.

9. Demonstrate repositioning of SCBA.

9.1 Demonstrate propping SCBA according to procedures discussed in class.

9.2 Demonstrate dumping SCBA according to procedures taught in class.

10. Demonstrate emergency procedures while wearing SCBA.

10.1 Demonstrate emergency buddy-breathing techniques as taught in class or illustrated in IFSTA Essentials.

10.2 Demonstrate restricted use of bypass valves as discussed in class or illustrated in IFSTA Essentials. (4-6.3)

( ) Indicates reference to NFPA 1001.

Self-Contained Breathing Apparatus Practical Exam, Part 1

OBJECTIVE: To test a candidate's ability to put the SCBA into operation within a specified time period. The candidate will be given adequate free time to inspect and ready the apparatus to his or her approval before starting time begins. (Some of the items to consider checking are position of straps, valves, connection of high pressure hose, etc. When the inspection is finished, the apparatus should be in its original condition.) The candidate should be told to follow the sequence of steps learned in class, and that time will begin when the candidate is ready and the evaluator says begin. Time will end when the candidate secures the breathing tube to the regulator and begins to draw air. On completion of the drill, the candidate will be required to put the SCBA unit back in service.

Recommended sequence:

1. Check pressure reading on cylinder gauge. (Candidate should notify evaluator if gauge reads below fire department-approved minimum pressure.) *Start timed maneuver*.

2. Check coupling nut for tightness.

3. Open cylinder valve fully.

4. Tighten harness straps in correct order. (Shoulder, waist, chest)

5. Remove regulator outlet protective cap if present. Open main line valve with right hand and cover regulator outlet with left hand. Check regulatory gauge, pressure should be the same as cylinder pressure. (With a difference of over 100 psi, high or low, instructor should be notified).

6. Tighten facepiece straps in correct order (chin, temple, top).

7. Tighten facepiece for adequate seal and operation of exhalation valve.

8. Crack open bypass valve to clear regulator orifice.

9. Place breathing tube into regulator inhale again.

10. Open main line valve – *End of timed evolution*.

11. Shut off cylinder valve while wearing unit.

12. Bleed down regulator by opening main line and then closing main line.

13. Put harness and/or mask back in service.

Self-Contained Breathing Apparatus Practical Exam, Part 2

Skills to be Performed

Air Pack Donning

1. Overhead method
2. Coat method

Cylinder Change

1. On firefighter
2. Off firefighter

Air Consumption Exercise

Tank Pressure	Time
Start _____psi	Start _____psi
Finish _____psi	Finish _____psi
Used _____psi	Used _____psi

Work Load

Light
Medium
Heavy

Use of Breathing Equipment

1. Actual smoke-filled environment

2. Simulated smoke-filled environment

   a. Situation given:

   b. Changes in situation:

Emergency Situations

1. Regulatory malfunction

2. Damaged facepiece

3. Buddy breathing (optional)

   a. Common regulator
   b. Common facepiece
   c. Kominsky method

Section: Ladders (NFPA 1001, 3-12 and 4-12)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Know basic ladder information.

   1.1 Identify from pictures or actual ladders the various types of ladders described in IFSTA Essentials. (3-12.1)

   1.2 Define the use of each ladder discussed in IFSTA Essentials. (3-12.1)

   1.3 Describe various components of ladders as described in IFSTA Essentials.

2. Know ladder cleaning techniques.

   2.1 Demonstrate and describe proper ladder cleaning techniques as illustrated in IFSTA Essentials. (3-12.8)

3. Demonstrate laddering techniques.

   3.1 Demonstrate ladder carrying with one through six firefighters. (3-12.2)

   3.2 Demonstrate each type of raise with a variety of ground ladders as illustrated in IFSTA Essentials. (3-12.3)

   3.3 Demonstrate climbing techniques described in IFSTA Essentials. (3-12.4)

   3.4 Demonstrate tool carries up and down ground ladders and appropriate aerial devices as described in IFSTA Essentials. (3-12.5)

   3.5 Demonstrate working off ladders using appropriate safety devices or leg locks as described in IFSTA Essentials. (3-12.7)

   3.6 Demonstrate moving "injured" people down a ladder using methods described in IFSTA Essentials. (3-12.6)

4. Know ladder construction and load factors.

   4.1 Identify materials used in ladder construction according to IFSTA Essentials. (4-12.1)

   4.2 Identify load safety features on ground and aerial ladders using manufacturer's recommendations or IFSTA Essentials. (4-12.2)

   4.3 Demonstrate inspection and maintenance procedures for ground and aerial ladders according to manufacturer's recommendations or IFSTA Essentials. (4-12.3)

5. Demonstrate methods of placing and carrying an unconscious victim on different types of ladders according to the ladder construction and IFSTA Essentials.

( ) Indicates reference to NFPA 1001.

Ladders Sample Practical Exam, Part 1

Ladder Raises

OBJECTIVE: The candidate will be evaluated on the ability to carry, raise, set, and lower an extension ladder. If one candidate is to be evaluated, then the 24-ft extension ladder raise will be used. If more than one candidate is to be evaluated, then the 38-ft extension ladder will be used. A ladder can be raised more than once for a complete evaluation (Keep in mind that one evaluator will evaluate one candidate. The candidate will be given points for proper procedure according to the schedule below).

One-Person Evaluation 24-ft Extension Ladder	Four-Person Evaluation 38-ft Extension Ladder
1. Selects correct ladder	1. Selects correct ladder
2. Carries ladder properly	2. Carries ladder properly
3. Proper position for raise (heel against building--fly up)	3. Proper position for raise
4. Raises ladder correctly	4. Correctly positions hands and feet
5. Moves heel away from building (approximately 1 ft)	5. Watches top of ladder
6. Correctly secures ladder with foot outside beam and knee against beam	6. Raises fly correctly and locks dogs
7. Fully extends fly	7. Correctly ties safety hitch
8. Sets ladder to right side of opening	8. Places ladder to right side of opening
9. Correctly ties safety hitch	9. Correctly sets heel
10. Rolls ladder over	10. Correctly removes ladder from building
11. Sets heel correctly (1/4 length of raise)	11. Correctly lowers fly
12. Lowers ladder in reverse sequence	12. Correctly lowers and grounds ladder

Ladders Sample Practical Exam, Part 2

Ladder Carries

Remove from fire engine and carry 25 ft, return and remount ladder on fire engine.

1. 16-ft roof, one person

2. 16-ft roof, two persons

   a. Under arm
   b. Arm's length
   c. Shoulder

3. 24-ft extension, two persons

   a. Arm's length
   b. Under arm

4. 28-ft extension, two persons

   a. Arm's length
   b. Under arm

5. 35-ft extension, three persons

   a. Arm's length flat
   b. Shoulder flat

6. 40 ft or larger pole or bangor, six persons

   a. Shoulder

Ladder Raises

Ladders flat on ground at the position at which they are to be raised. Start time when ladder is picked up. Stop time when ladder touches building, fully extended.

7. 16-ft roof, one man

8. 16-ft roof, two persons

9. 16-ft roof (beam raise), two persons

10. 24-ft extension, one person

11. 24-ft extension, two persons

12. 28-ft extension, two persons

13. 35-ft extension, three persons

14. 40-ft pole or bangor, four persons

15. 40-ft pole or bangor, six persons (parallel to building)

Climbing Ladder

16. Climbing ladder with roof ladder (two persons) and straight ladder in position at one-story building. Roof ladder in position at the base of ladder to be climbed. Start time when roof ladder is picked up. Stop time when roof ladder is in position on the roof.

17. Move vertically positioned 35-ft extension ladder (extended position) 8 ft by rolling. (one person)

18. Move vertically positioned 20-ft ladder 8 ft by lifting and carrying. (one person)

19. Raise a ladder to compensate for overhead obstacle. (two persons)

20. Carry 35-ft extension ladder through narrow spaces at least 10 ft long. (two persons)

21. Climb the full length of every type of ladder in the department.

22. Carry a pick head axe to the third floor window level, secure with leg lock, simulate breaking out a window, and return to the ground.

23. Inspect ground ladders, explaining areas susceptible to damage and proper procedure for cleaning.

24. Climb 100 ft aerial fully extended, wearing full turnout clothing and SCBA and carrying a pike pole.

Ladders Sample Practical Exam, Part 3

Carry and Raise

1. Choose correct type and size of ladder according to instructions.
2. Position persons for carry.
3. Ladder pickup or dismount.
4. End of ladder to use in lead.
5. Position ladder for raise designated.
6. Ladder raise.
    a. Butt persons
    b. Beam persons
    c. Halyard pulled hand over hand
    d. Height and position of ladder
    e. Tie of halyard
    f. Spacing.
7. Carry tool while climbing ladder.
8. Leg lock or "tie-in" as instructed.
9. Lowering ladder to ground position.
10. Returning ladder to designated place.
11. Overall safety.

Move Vertically Positioned Ladder by Rolling or Lifting

1. Select correct position to begin operation.
2. Perform operation designated correctly.
3. Realign ladder properly.

Under Wire Raise

1. Select correct position for raise.
2. Move correctly according to command.
3. Position correctly for raise.
4. Clear obstacles.
5. Lower ladder to correct position.

Section: Hose, Nozzles, and Appliances (NFPA 1001, 3-13 and 4-13)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Know construction features of fire hose.

   1.1 Identify or select from samples, descriptions, or actual items, various sizes of fire hose as described in IFSTA Essentials.

   1.2 Describe construction features of hose as illustrated in IFSTA Essentials.

   1.3 Describe or list uses of fire hose as described in IFSTA Essentials.

   1.4 Identify or select the dimensions of fire hose as described in IFSTA Essentials. (3-13.1)

2. Know construction features of fire hose couplings.

   2.1 Describe construction features of fire hose couplings as illustrated in IFSTA Essentials.

   2.2 Identify parts and dimensions of selected hose couplings according to IFSTA Essentials.

   2.3 Demonstrate three coupling procedures as illustrated in IFSTA Essentials. (3-13.10)

3. Know procedures for basic loads (3-13.7).

   3.1 Describe general loading considerations as described in IFSTA Essentials.

   3.2 Identify from actual load, diagrams, or pictures the various hose loads as described in IFSTA Essentials.

   3.3 Demonstrate selected loading and unloading of hose loads according to prescribed procedures illustrated in IFSTA Essentials.

4. Know hose rolls (3-13.8).

   4.1 Describe uses of hose rolls illustrated in IFSTA Essentials.

   4.2 Demonstrate at least three types of hose rolls described in IFSTA Essentials.

5. Demonstrate at least two hose carries illustrated in IFSTA Essentials. (3-13.9)

6. Know hose and hose coupling maintenance procedures. (3-13.5)

   6.1 List the four main causes of fire hose injuries as described in IFSTA Essentials.

   6.2 Demonstrate cleaning and inspecting couplings as described in IFSTA Essentials.

   6.3 Demonstrate the proper technique for inspecting gaskets used in fire hose and appliances according to illustrations provided in IFSTA Essentials.

7. Demonstrate the proper procedure for making hydrant connections as described in IFSTA Essentials. (3-13.6)

8. Know procedures for replacing a burst section of fire hose or extending a line. (3-3.13), (3-13.14)

   8.1 Demonstrate procedures for lengthening a line using a hose clamp or break-apart nozzle as described in IFSTA Essentials.

   8.2 Demonstrate procedures for replacing a section of hose using the kink or clamp method described in IFSTA Essentials.

9. Know procedure for dry line advancement.

   9.1 Demonstrate procedures for advancing <u>dry</u> 1 1/2-in. or larger line in the following situations: (3-13.1)

      a) Into a structure

      b) Up a ladder into a structure

      c) Up an inside stairway

      d) Down an interior stairway

      e) Up and down an outside stairway

      f) To an upper area of a structure.

      All procedures will conform to illustrations or practices described in IFSTA Essentials.

10. Know procedure for charged line advancement.

   10.1 Demonstrate procedures for advancing a <u>charged</u> line according to the following conditions: (3-13.4)

      a) Into a structure

      b) Up and down an interior stairway

c) Up and down an exterior stairway

d) Work from a ladder

e) In an open area environment as described and illustrated in IFSTA Essentials.

11. Demonstrate procedures for standpipe advancement per IFSTA Essentials or local standard operating procedures. (3-13.12)

12. Demonstrate, select, or identify any nozzle according to size and usage in accordance with IFSTA Essentials. (4-13.1)

13. Knows hose lays and loads. (4-13.2)

13.1 Describe the difference between a forward and reverse hose lay as illustrated in IFSTA Essentials.

13.2 Demonstrate loading and unloading of the following hose loads as illustrated in IFSTA Essentials:

a) Minuteman load

b) Triple layer load

c) Nonconnected wyed lines.

13.3 Demonstrate the shoulder load according to procedures taught in class or illustrated in IFSTA Essentials.

14. Demonstrate proper maintenance activities for hose, hose appliances, and nozzles according to IFSTA Essentials. (4-13.3)

15. Demonstrate hose connections to fire engine. (4-13.4)

15.1 Demonstrate "small" intake line connections to fire engine according to IFSTA Essentials.

15.2 Demonstrate "large soft" intake line connections to fire engine according to IFSTA Essentials.

15.3 Demonstrate "hard" intake line connections to fire engine according to IFSTA Essentials.

16. Demonstrate appliance selection based on specific fireground needs using descriptions provided in IFSTA Essentials. (4-13.5)

( ) Indicates reference to NFPA 1001.

This page intentionally left blank.

Hose, Nozzles, and Appliances Sample Practical Exam, Part 1

Attaching Hose Appliance

1. Select correct appliance.
2. Attach appliance by approved method.
3. Determine if appliance is operable as attached.
4. Choose correct operating position(s) for appliance.

Replacing a Section of Hose

1. Place hose clamp properly to remove burst section.
2. Remove burst section.
3. Insert good section.
4. Remove hose clamp.

Securing Hose Jacket

1. Place jacket at correct location for operation.
2. Make necessary adjustments for hose jacket operation.
3. Properly secure hose jacket.
4. Return hose line to operation.

Hydrant Connection

1. Pull off necessary hose to reach hydrant.
2. Take necessary wrenches with hose.
3. Tell driver to proceed.
4. Wrap hydrant correctly.
5. Make connection to hydrant.
6. Charge line by opening hydrant all the way.

Standpipe and Sprinkler Connection

1. Choose correct hose line(s) for connection.
2. Locate specified connection and check for obstructions.
3. Make hose connection.

4. Provide for correct hose line position.

Hose Roll Designation

1. Make designated hose roll.

2. Start roll with correct coupling.

3. Arrange hose to be rolled in proper position.

Hose Load or Finish Designation

Loads for maneuver: Horseshoe, reverse horseshoe, accordion, divided hose bed, skid load finish, donut roll finish.

Each load should be constructed with six sections of hose within time limits set for each load.

1. Start hose load properly.

   a. Reverse
   b. Forward.

2. Make designated load or finish.

   a. Correct procedure
   b. Make dutchman as required
   c. Start tier correctly
   d. Stagger ends of folds.

3. Attach nozzles and adapters to load as finish requires.

Hose Advances and Carries

1. Unload hose in manner necessary to make designated drag or carry.

2. Advance hose using proper carry or drag designated.

   a. Hose pays off the top of shoulder or underarm carry.
   b. Backup persons space themselves properly.
   c. Hose pays off in proper sequence.
   d. Hose pays off on same side of nozzleman and backup persons.
   e. Length of hose loop on ladder advancement is between 20-25 ft
   f. Hose is lashed to ladder.
   g. Bends in hose on stairway advancement not too sharp.
   h. Proper amounts of hose removed from hose bed to meet needed requirements.

Hose, Nozzles, and Appliances Sample Practical Exam, Part 2

Pump Intake Connections with Hard Intake Hose

1. Take hydrant wrench, remove hydrant cap, put hydrant wrench on hydrant away from the outlet used.

2. Remove hard intake hose from fire engine and place it on the ground with male coupling toward hydrant.

3. The driver elevates the male end of the hose while the other person connects the nonswivel end of the adaptor to the male coupling.

4. Align the adaptor swivel with the hydrant outlet, and the person at the hydrant makes the connection.

5. Pick up the female end of the hose and make necessary curves to direct the end toward pump intake.

6. Finish making connection at the pumper.

Pump Intake Connections with Soft Intake Hose

1. Remove hose, necessary adapters, and hydrant wrench from fire engine.

2. Place cap and hydrant wrench away from hydrant opening being used.

3. Unroll intake hose from hydrant.

4. Make connection to hydrant.

5. Make connection to pump.

Hose, Nozzles, and Appliances Sample Practical Exam, Part 3

Skills to be performed:

1. Hose rolls — each student uses 150 ft length of 1 1/2-in. hose to make the following:

   - Donut roll
   - Double donut roll
   - Self-locking hose roll.

2. Appliances - attach the following:

   - 1 3/4-in. line to a solid bore nozzle
   - 1 1/2-in. line to an adjustable stream nozzle
   - 2 1/2-in. line or larger, to an adjustable stream nozzle
   - 2 1/2-in. line or larger, to a distributor nozzle
   - 2 1/2-in. line or larger, to a wye
   - 2 1/2-in. line or larger, to a siamese
   - 2 1/2-in. line or larger, to a double female
   - 2 1/2-in. line or larger, to a double male
   - 2 1/2-in. line or larger, to a reducer
   - 2 1/2-in. line or larger, to a hose jacket.

3. Coupling

   - Couple two lengths of 3-in. line
     - 1 person
     - 2 person

   - Make a storz to storz connection using one section of 5-in. hose
     - 1 person
     - 2 person

   - Demonstrate uncoupling 3-in. hose using the knee press method.

4. Hose testing

   a. Lay out all hose to be tested--not more than 300-ft sections, no kinks, record numbers.

   b. Connect manifold to water and pressure source.

   c. Connect lines to manifold, mark each hose with a line where it meets each coupling (use a soft pencil).

   d. Fill all lines with water.

   e. Bleed all air out of the hose.

   f. Raise internal pressure to 250 psi, hold the test pressure for 5 minutes, observe hose.

g. Reduce pressure slowly, bleed off lines.

h. Observe all marks and observe hose. If any section fails, mark what is wrong and take it out of service.

5. Fire department connections

a. Connect the 5-in. hose to a fire hydrant with the fire engine in position as in forward lay (1 person).

b. Connect the 5-in. hose to a fire hydrant with fire engine in position as in a reverse lay (1 person).

c. Remove two 50-ft sections of hose from the fire engine and connect to the hydrant and intakes of the fire engine simulating a duel drop (1 person).

d. Connect the hard suction with the strainer as in drafting (2 persons).

6. Supply lines

a. Make sprinkler connection, drop duels, and make a hydrant connection at a distance no shorter than 75 ft (2 persons).

b. Drop a deck gun and duels, and make a hydrant connection at a distance no shorter than 75 ft to simulate a 600 gpm flow (2 persons).

7. Anchoring Hose

a. Anchor a 2 1/2-in. hose line in a circle (street loop) for a one-person operation (1 person).

b. Anchor a 2 1/2-in. line with a nozzle to a ladder using:

- A hose strap (1 person)
- A rope hose tool (1 person).

8. Tools

a. Hoist one end of 50 ft of 2 1/2-in. fire hose onto a roof, using the following: (1 person)

- Secured hose roller
- 100 ft of 5/8-in. rope.

b. Place a hose clamp in the following manner: using three lengths of charged hose, place the clamp on the length nearest the water supply, replace the center section of hose (simulated burst hose section, and remove the clamp [2 person]).

9. Line advancement — all with full gear and air packs

   a. Advance a 1 1/2-in. line up a ladder to the roof (1 person).

   b. Advance a 1 3/4-in. line up a ladder to the roof (1 person).

   c. Advance a 2 1/2-in. line up a ladder to the roof (1 person).

   d. From the ground floor, carry the 1 1/2-in. line with 50 ft of 2 1/2-in. hose from the doorway to the second floor (2 person)

   e. Up an inside stairway to the second floor landing, carry the following:

      1 1/2-in. dry 1 person
      1 3/4-in. dry 1 person
      2 1/2-in. dry 1 person

   f. Advance a charged 1 1/2-in. line 50 ft into a structure (1 person).

   g. Advance a charged 1 3/4-in. line 50 ft into a structure (1 person).

   h. Advance a charged 2 1/2-in. line 50 ft into a structure (1 person).

10. Hose loads

   a. Demonstrate a horseshoe load with four sections of 2 1/2-in. line.

   b. Demonstrate a reverse horseshoe load with four sections of 2 1/3-in. line.

   c. Demonstrate an accordion load with four sections of 2 1/2-in. line.

   d. Demonstrate a rural lay.

   e. Demonstrate the mall skid finish.

   f. Rack 200 ft of 5-in. hose on the hose bed (2 person).

   g. Demonstrate the minuteman with two lengths of 1 3/4-in. hose.

Section: Personal Safety (NFPA 1001, 3-11 and 4-11) Note: NFPA 101 has no objectives for safety at the Firefighter II level.

Reference: IFSTA Firefighter Occupational Safety (Current) Chapter 4-6-14

Goal Statement: On completion of this subject, the student shall be able to fulfill the following objectives.

1. Know dangerous building conditions created by fire. (3-11.1)

   1.1 Describe the effects of the following items in a burning building: [IFSTA 200]

      a) Intense heat

      b) Dense smoke

      c) Large volume of water poured into and on the structure.

   1.2 Define the term "building collapse." [IFSTA 200]

2. Describe techniques for action when trapped or disoriented in a fire situation or in a hostile environment. (3-11.2)

3. Know procedures to be used in any electrical emergency. (3-11.3)

   3.1 List electrical emergencies that may be encountered.

   3.2 Identify proper actions to take in the case of an electrical emergency.

4. Know personal protective equipment. (3-11.7)

   4.1 Identify components of an approved turn-out coat and the type of protection supplied by the coat.

   4.2 Identify the components of an approved helmet and the protection supplied to the wearer.

   4.3 Identify the proper gloves and the type recommended for fire service use.

   4.4 Identify the components of an approved boot and the protection supplied to the wearer.

5. Know safety procedures for riding and working around a fire engine. (3-1.7)

   5.1 List and define the proper precautions when riding and working around a fire engine. (3-11.7)

6. Know precautions when working on the fire ground. (3-11.7)

   6.1 List and define five precautions to take when working at the fire scene.

7. Demonstrate proper safety procedures when working at a fire scene. (3-11.7)

8. Describe and demonstrate safety procedures when using portable tools and equipment including lighting equipment. (3-11.5 and 3-11.7)

9. Describe procedures for responding to hazardous material incidents. (3-11.7)

10. Understand the safe use of facilities. [Ref. Chapter 4 - IFSTA 209]

11. Understand the needs and uses of personal protective equipment. [Ref. Chapter 6 - IFSTA 209]

12. Understand health considerations. [Ref. Chapter 11 - IFSTA 209]

( ) Indicates reference to NFPA 1001.

[ ] Indicates IFSTA manual reference.

Section: Ropes and Knots (NFPA 101, 3-9 and 4-9)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. The firefighter, when given the name, picture, or actual knot, will identify it and describe the purpose for which it would be used. (3-9.1)

2. The firefighter, when given the proper size and amount of rope, shall demonstrate tying the following knots (need not be limited to these knots): (3-9.2)

   2.1 Bowline knot (tie within 15 seconds)

   2.2 Clove hitch (tie within 15 seconds)

   2.3 Becket or sheet bend (tie within 15 seconds).

3. The firefighter, given the proper rope, shall demonstrate the bight, loop, round turn, and half hitch as used in tying knot hitches. (3-9.3)

4. The firefighter, using an approved knot, shall hoist any selected forcible entry tool, ground ladder, or appliance to a height of at least 20 ft. (3-9.4)

5. The firefighter shall demonstrate the techniques of inspecting rope for the following: (3-9-5)

   5.1 Chemical damage

   5.2 Cuts and abrasions

   5.3 Internal damage

   5.4 Mildew and rot

   5.5 Stretch

   5.6 Thermal damage.

6. The firefighter shall demonstrate the proper cleaning and maintenance of rope as illustrated in IFSTA Essentials. (3-9.6)

7. Differentiate rope selection procedures.

   7.1 Demonstrate ability to select proper size, construction features, and length for selected task according to class discussion or IFSTA Essentials. (4-9.1)

   7.2 Select and tie a rope between two objects at least 15 ft apart that will support the weight of a firefighter. (4-9.2)

   7.3 Select and use the rope to tie ladders, hose, and other equipment

so as to secure them to immovable objects. (4-9.3)

8. Describe appropriate method(s) of rope storage as described in IFSTA Essentials.

9. Indicate the method of marking a rope to remove from service according to manufacturer's recommendations or as illustrated in IFSTA Essentials.

NOTE: Information to the following will be found in the IFSTA Rescue Manual.

10. The firefighter, when given the proper size and amount of rope, shall demonstrate tying the following knots:

10.1 Rescue knot (tie within 1 minute)

10.2 Figure 8 (tie within 15 seconds).

( ) Indicates reference to NFPA 1001.

Ropes and Knots Sample Practical Exam, Part 1

OBJECTIVE: The candidate will be tested on the ability to select the correct size rope, tie the appropriate knot, and use the various knots to their practical application. The evaluator will select five of the following drills and/or knots and have the candidate demonstrate the ability in performing the drill or tying the specific knot.

	DRILLS		KNOTS
1.	Hoisting roof ladder	1.	Half hitch
2.	Hoisting straight ladder	2.	Clove hitch
3.	Hoisting axe	3.	Guy line
4.	Hoisting pike pole	4.	Square knot
5.	Hoisting hose	5.	Becket
6.	Tie hose roller	6.	Bowline
7.	Tie unequal ropes together	7.	Running bowline
8.	Rescue victim	8.	Rescue knot
9.	Draw knot		
10.	Cradle (life) knot		
11.	Bowline-on-a-bight		
12.	Greasy Pole (up or down)		

Ropes and Knots Sample Practical Exam, Part 2

Knots to be Tied as Directed within Time Limits

1. Square knot
2. Becket bend
3. Clove hitch
    a. End of line
    b. Middle of line
4. Timber hitch
5. Sheepshank
6. Bowline around self or object
7. Bowline — on-a-bight
8. Chimney hitch
9. Half sheepshank with a safety
10. Rescue knot

Hoisting, Lowering, Roping Off, and Storage

1. Tie and hoist axe to 3rd floor.
2. Tie and hoist pike pole to 3rd floor.
3. Tie and hoist fire extinguisher to 3rd floor.
4. Tie and hoist roof ladder to 3rd floor.
5. Tie rescue knot on victim and lower from 3rd floor.
6. Rope off area between two immovable objects so that rope supports firefighter weight.
7. Make rope coil with 100 ft of rope.
8. Bag 100 ft of rope.

Section: Emergency Medical Care (NFPA 1001, 3-3 and 4-3)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify steps in a primary survey.

2. Know procedures for opening an airway.

   2.1 (Identify) or (demonstrate) methods to determine if an airway is open or closed. (3-3.2)

   2.2 Demonstrate procedures for opening an airway. (3-3.3)

3. Know bleeding emergencies.

   3.1 Identify three types of external bleeding and characteristics. (3-3.8)

   3.2 Demonstrate techniques for controlling external bleeding. (3-3.9)

4. Know ventilation procedures.

   4.1 Demonstrate mouth-to-nose ventilation. (3-3.4)

   4.2 Demonstrate oro-nasal ventilation. (3-3.5)

   4.3 Demonstrate mouth-to-mouth ventilation. (3-3.6)

5. Know cardiac arrest situations.

   5.1 Identify three signs of cardiac arrest. (3-3.6)

   5.2 Demonstrate cardiopulmonary resuscitation (CPR). (3-3.7)

6. Know injury-producing mechanisms and their relationship to the victim.

   6.1 Identify four sources that provide information concerning the nature of the victims' injuries according to class discussion. (4-3.1)

   6.2 Identify suspected injuries from information provided concerning the mechanics of the accident plus the obvious injuries. (4-3.2)

   6.3 Identify and demonstrate care of traumatic shock victims according to recognized standards. (4-3.15)

7. Know secondary survey procedures.

   7.1 Describe the secondary survey procedures according to class discussion. (4-3.3)

   7.2 Demonstrate a secondary survey on an "injured" person within

60 seconds. (4-3.3)

7.3 Demonstrate sequential emergency care for an accident victim according to recognized procedures. (4-3.7)

8. Know internal bleeding.

8.1 Identify signs and symptoms of internal bleeding according to standardized practices. (4-3.4)

8.2 Demonstrate emergency care for victims of suspected internal bleeding according to recognized practice. (4-3.5)

9. Know burns and the distinction between certain types of burns.

9.1 Identify characteristics of thermal burns according to class discussion or IFSTA Essentials. (4-3.6)

9.2 Identify characteristics of a chemical burn according to class discussion. (4-3.8)

9.3 Demonstrate procedures for handling thermal burns according to recognized procedures. (4-3.6)

9.4 Demonstrate procedures for emergency care of chemical burns according to recognized procedures. (4-3.8)

9.5 Describe and demonstrate the flushing of eyes for suspected chemical burns according to recognized procedures. (4-3.8)

10. Know fractures.

10.1 Identify from an illustration, diagram, or picture, the type of fracture according to recognized practices. (4-3.9)

10.2 Describe the difference between certain types of fractures according to recognized practices. (4-3.9)

10.3 Describe three general signs of a fracture according to recognized practices. (4-3.10)

10.4 Demonstrate proper splinting techniques illustrated in class. (4-3.11)

11. Know the basic breathing system used by the human body.

11.1 Identify and describe the anatomical process of breathing according to class discussion. (4-3.12)

11.2 Describe the heart, lung, and brain relationship according to class discussion. (4-3.13)

11.3 Demonstrate two-person CPR according to recognized standards.

(4-3.14)

11.4 Demonstrate the use of breathing aid equipment in accordance with recognized standards or manufacturer's recommendations. (4-3.16)

( ) Indicates reference to NFPA 1001.

This page intentionally left blank.

Emergency Medical Care Sample Practical Exam

Blood pressure

1. Place cuff in correct location.

2. Place stethoscope in correct location.

3. Use inflation bulb and valve correctly.

4. Obtain accurate readings.

Resuscitation Practical

1. Position patient.

2. Check airway.

3. Clear airway.

4. Suction airway.

5. Insert airway.

6. Administer

   a. Mouth to mouth
   b. Mouth to nose.

7. Apply mask.

8. Perform cardiac massage

   a. Hand position
   b. Rhythm
   c. Compression depth.

9. State correct rhythm or rate (CPR)

   a. Child (10 years)
   b. Child (3 years)
   c. Two rescuers.

Splinting

1. Identify location.

2. Keep extremity in place.

3. Obtain proper material or splint.

4. Place splint on correctly.

5. Check circulation.

Bleeding Control

1. Check for foreign body.

2. Use direct pressure.

3. Use correct pressure point.

4. Apply tourniquet correctly.

Section: Water Supply (NFPA 1001, 3-15 and 4-15)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Indicate knowledge of water distribution systems.

   1.1 Identify sources of water used in distribution systems according to local conditions or as described in IFSTA Essentials. (4-15.1)

   1.2 State the parts of a water distribution system including distributors, primary feeders, and secondary feeders. (4-15.2)

   1.3 Identify the various pressures that effect water distribution. (4-15.4)

2. Indicate knowledge of hydrant operation and maintenance procedures.

   2.1 Identify dry and wet barrel hydrants according to descriptions in IFSTA Essentials. (4-15.3)

   2.2 State maintenance procedures that include the following according to American Water Works Association Standards of IFSTA Essentials. (4-15.6)

      a) Obstruction to use of hydrant

      b) Direction of outlets to suitability of use

      c) Mechanical damage

      d) Corrosion problems

      e) Flow ability

      f) Ability to drain.

   2.3 Identify the following valves according to IFSTA Essentials. (4-15.5)

      a) Indicating

      b) Nonindicating

      c) Postindicating

      d) OS&Y.

3. Indicate knowledge of color coding and mapping of water distribution systems.

   3.1 Describe the NFPA system of hydrant color coding relative to flow capability.

   3.2 Interpret a water map describing local water distribution systems.

( ) Indicates reference to NFPA 1001.

Section: Forcible Entry (NFPA 1001, 3-7 and 4-7)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify forcible entry tools and their use under direct supervision. (3-7.1)

2. Demonstrate the safe use of forcible entry tools under direct supervision. (3-7.1)

3. Identify the methods for the following: (3-7.2)

   - Cleaning forcible entry tools
   - Inspecting forcible entry tools.

4. Indicate knowledge of specific features and materials used in building construction.

   4.1 Identify materials and construction features of doors as described in IFSTA Essentials. (4-7.1)

   4.2 Identify materials and construction features of windows as illustrated in IFSTA Essentials. (4-7.1)

   4.3 Identify materials and construction features of roofs as illustrated in IFSTA Essentials. (4-7.1)

   4.4 Identify materials and construction features of vertical barriers as illustrated in IFSTA Essentials. (4-7.1)

   4.5 Define the dangers associated with doors, windows, roofs, and vertical barriers as described in IFSTA Essentials. (4-7.1)

5. Indicate knowledge of forcible entry techniques.

   5.1 Identify or describe the procedures to use in forcing doors, windows, ceilings, roofs, floors, and vertical barriers as described in IFSTA Essentials. (4-7.2)

6. Demonstrate the proper techniques in forcing doors, windows, ceilings, roofs, floors, and vertical barriers as described in IFSTA Essentials. (4-7.2)

( ) Indicates reference to NFPA 1001.

Forcible Entry Sample Practical Exam

Forcible Entry Methods and Procedures to be Performed

1. Select proper tool(s) for operation.
2. Carry tool(s) safely and properly.
3. Follow preliminary procedures before forcing entry.
4. Use tool(s) safely and properly.
5. Maintain safe working area after forcing entry.

Forcible Entry or Small Tool Practical Exam

1. Choose correct tool for job assigned or tool designated by evaluator.
2. Carry tools safely and properly.
3. Follow preliminary procedure before forcing entry.
4. Use a particular tool safely and properly.
5. Maintain safe working area after forcing entry.

NOTE: For small tool practice, use a method that involves cutting with an axe or breaking glass.

Section: Overhaul (NFPA 1001, 3-18 and 4-18)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Know the purpose of overhaul.

   1.1 Identify the term overhaul provided by IFSTA Essentials. (3-18.5)

2. Know safety precautions during overhaul. (4-18.2)

   2.2 Identify appropriate safety equipment and clothing for performing overhaul activities.

   2.3 Identify hazards associated with overhaul operations.

3. Demonstrate procedures for searching for hidden fires by sight, touch, and smell. (3-18.1)

4. Demonstrate techniques for opening walls, ceilings, and floors. (3-18.3)

5. Demonstrate how to separate burned from unburned materials. (3-18.3)

6. Identify duties of firefighters left at the fire scene for fire and security surveillance. (3-18.4)

7. Indicate knowledge of overhaul procedures. (4-18.1)

   7.1 Identify and describe functions of tools and equipment used in overhaul procedures as described in IFSTA Essentials.

8. Describe factors that influence the structural stability of a building.

   8.1 Identify methods of using the senses to determine unsafe conditions and detect hidden fires.

9. Explain the methods of protecting and preserving evidence during overhaul operations as described in IFSTA Essentials.

( ) Indicates reference to NFPA 1001.

This page intentionally left blank.

Section: Fire Streams (NFPA 1001, 3-14 and 4-14)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify the term "fire stream" described in IFSTA Essentials. (3-14.1)

2. Identify the four purposes of a fire stream.

3. Identify advantages of using water as an extinguishing agent.

4. Identify disadvantages of using water as an extinguishing agent.

5. Identify the three types of fire streams described in IFSTA Essentials.

6. Identify the difference between a straight stream and a solid stream as defined in IFSTA Essentials.

7. Identify the five categories of fire stream nozzles as described in IFSTA Essentials.

8. Identify "water hammer" and provide one method of prevention. (3-14.3)

9. Identify nozzle reaction.

10. Demonstrate how to open and close a nozzle as described in IFSTA Essentials. (3-14.4)

11. Demonstrate attacking a Class A and Class B fire under direct supervision. (3-14.2)

12. Identify methods of preventing damage to a nozzle and associated equipment as described in IFSTA Essentials.

13. Identify safe procedures in the handling of fire hose and directing fire streams.

14. Identify all reference material, record keeping procedures, and testing procedures.

15. Indicate knowledge of nozzle characteristics.

    15.1 Identify the characteristics of the following streams in accordance with illustrations provided in IFSTA Essentials:

        a) Solid stream

        b) Fog stream

        c) Broken stream (4-14.3).

    15.2 Identify the flow capacity of hand-held 1-in., 1 1/8-in., and 1 1/4-in. tips; master stream 1 1/4-in. to 2-in. tips; and 3/4-in.

to 1-in., 1 1/2-in., and 2 1/2-in. handheld line fog nozzles according to IFSTA Essentials.

15.3 Select the nozzle pressure for solid stream and fog nozzles according to manufacturer's recommendations or IFSTA Essentials.

15.4 Demonstrate the use of each type of nozzle as illustrated in IFSTA Essentials. (4-14.2)

16. Indicate knowledge of fire stream application.

16.1 Define direct, indirect, and combination methods of applying water according to definitions provided in IFSTA Essentials. (4-14.1)

16.2 Select appropriate nozzle and hose line for specific fire situations according to IFSTA Essentials.

16.3 Describe precautions to follow when advancing a hose line according to IFSTA Essentials. (4-14.4)

16.4 Identify three conditions that result in pressure loss in hose lines according to IFSTA Essentials. (4-14.5)

16.5 Identify four special purpose nozzles and demonstrate the application of two according to manufacturer's recommendations or illustrations provided in IFSTA Essentials. (4-14.6)

17. Indicate knowledge of fire foam application. (4-14.7)

17.1 Identify the three basic types of foam agents.

17.2 Identify and define foam-making appliances.

17.3 Describe or demonstrate foam stream characteristics from various nozzles.

18. The firefighter will identify three observable results that are obtained when the proper application of a fire stream is accomplished. (4-14.8)

19. The firefighter will identify and define those items required to develop three types of fire streams and shall demonstrate each. (4-14.9)

( ) Indicates reference to NFPA 1001.

Fire Streams Sample Practical Exam

Task: Handling and control of 1 1/2-in., 1 3/4-in., 2 1/2-in., and 3-in. hose lines. The candidate will be tested on the following.

1. Hold 1 1/2-in. hose alone.

2. Hold 1 1/2-in. hose using two people.

3. Hold 2 1/2-in. hose using high pressure loop.

4. Hold 2 1/2-in. hose using two-person method.

5. Hold 1 1/2-in. hose using three-person method.

6. Maneuver the nozzle.

7. Demonstrate proper handling of 1 1/2-in. and 1 3/4-in. hose line.

8. Demonstrate proper handling of 2 1/2-in. and 3-in. hose line.

9. Correctly apply 1 1/2-in. and 1 3/4-in. fog stream to simulated structure fire, being careful not to "over fog" the area, thereby upsetting the thermal balance.

10. Demonstrate the following stream applications:

    a. O pattern
    b. Z pattern
    c. Crisscross pattern

11. Explain the venturi principle for foam systems and demonstrate proper foam application.

12. Demonstrate the use of streams in the following situations:

    a. Ventilation techniques
    b. Water curtain
    c. Master stream situation

13. Demonstrate proper opening and closing of nozzles so as to avoid a water hammer.

This page intentionally left blank.

Section: Ventilation (NFPA 1001, 3-8 and 4-8)

Goal Statement: On completion of this subject, the student will fulfill the following objectives.

1. Know basic ventilation theory and practices.

   1.1 Identify the principles of ventilation including advantages and disadvantages as described in IFSTA Essentials. (3-8.1)

   1.2 Identify dangers present and precautions to take in performing ventilation as described in IFSTA Essentials. (3-8.2)

   1.3 Identify the theory of a "backdraft explosion" as defined in IFSTA Essentials. (3-8.6)

2. Know basic ventilation procedures.

   2.1 Demonstrate opening various windows with and without fire department tools or according to procedures outlined in IFSTA Essentials. (3-8.3)

   2.2 Demonstrate breaking glass and removing obstructions as described in IFSTA Essentials. (3-8.5)

   2.3 Demonstrate proper roof opening techniques using appropriate tools and procedures described in IFSTA Essentials. (3-8.5)

   2.4 Demonstrate floor ventilation procedures as described in IFSTA Essentials. (3-8.5)

3. Indicate knowledge of building construction applied to ventilation procedures.

   3.1 Identify roof features for ventilation purposes according to IFSTA Essentials. (4-8.2)

   3.2 List precautions to take when venting a structure according to class discussion or IFSTA Essentials. (4-8.2)

   3.3 Describe size of opening and appropriate location for vent opening according to prescribed procedures or IFSTA Essentials. (4-8.3)

   3.4 Describe methods used to vent a structure according to class discussion or IFSTA Essentials.

4. Demonstrate ventilation techniques.

   4.1 Demonstrate the use of different types of power saws and power tools according to manufacturer's recommendations or IFSTA Essentials. (4-8.4)

   4.2 Demonstrate the removal of skylights, scuttle covers, and other

roof openings according to class discussion or IFSTA Essentials. (4-8.4)

4.3 Demonstrate equipment used in forced ventilation procedures according to manufacturer's recommendations or IFSTA Essentials. (4-8.5)

4.4 Demonstrate ventilation using water fog according to IFSTA Essentials. (4-8.6)

( ) Indicates reference to NFPA 1001.

Ventilation Sample Practical Exam

1. Indicate opening size and location required for a given fire problem involving vertical ventilation by going to the roof of the building and marking the outline of the decided opening on the roof.

2. Carry all needed ventilation equipment to the roof and explain how you would ventilate. Include all safety precautions and safety measures associated with the equipment.

3. Place equipment in a smoke-filled room and ventilate using horizontal methods.

4. Ventilate a smoke-filled room with a water stream.

This page intentionally left blank.

Section: Rescue (NFPA 1001, 3-10 and 4-10)

Goal Statement: On completion of this subject, the student will fulfill the following objectives.

1. Demonstrate the removal of injured persons from the immediate hazard by the use of carries, drags, and stretchers.

   1.1 Describe different methods of improvising a litter.

   1.2 Demonstrate the proper method of carrying a litter.

2. Demonstrate searching for victims in burning, smoke-filled buildings or other hostile environments.

   a. Primary search.
   b. Secondary search.

3. Identify the use of a life belt. (3-10.3)

4. Demonstrate techniques of removing debris, rubble, and other materials found at cave-ins or building collapse using prescribed methods described in class or IFSTA Essentials. (4-10.1)

5. Demonstrate the use of tools using manufacturer's recommendations and procedures described in IFSTA Essentials. (4-10.2)

6. Demonstrate techniques of preparing a victim for emergency transportation using standard equipment or improvised methods according to manufacturer's recommendations or descriptions provided in IFSTA Essentials.

7. Identify areas of danger in the following situations according to class discussion or IFSTA Essentials. (4-10.4)

   7.1 Tunnels and caves

   7.2 Water rescue

   7.3 Construction sites

   7.4 Building collapse

   7.5 Confined spaces

   7.6 Toxic atmospheres

   7.7 Industrial processes

   7.8 Transportation accidents.

8. Demonstrate auto extrication procedures. (4-10.5)

   8.1 Remove tempered glass according to the procedures discussed in class.

   8.2 Remove laminated glass according to procedures discussed in class.

   8.3 Pull a steering wheel.

   8.4 Open an inoperative door.

   8.5 Open a crushed top.

   8.6 Stabilize an automobile vehicle.

   8.7 Pull a seat.

   8.8 Proper care removing a victim from a vehicular accident.

9. Demonstrate lowering a victim from a third floor level using prescribed practices or the description provided in IFSTA Essentials. (4-10.6)

( ) Indicates reference to NFPA 1001.

Rescue Sample Practical Exam

Rescue Carry

1. Prepare victim for carry or drag.
2. Perform carry or drag designated.
3. Remove victim to area designated. Victim must be moved at least 10 ft.

Ladder Rescue

1. Perform rescue procedure designated.
2. Prepare victim for rescue designated.
3. Tie knot correctly if rope is used.
4. Space ladder and anchor for rescue.
5. Use correct procedure for designated procedure.

This page intentionally left blank.

Section: Communications (NFPA 1001-1987, 3-2 and 4-2)

Goal Statement: On completion of this subject, the student will fulfill the following objectives.

1. Identify the various methods of receiving alarms.

2. Identify the steps involved in the receiving and processing of an alarm at the local level.

3. Identify local fire department engine alarm response orders.

4. Demonstrate a knowledge of local geography and routing procedures.

5. Identify mobile, portable, and base station radio equipment.

6. Identify fire department radio, fireground, and mutual aid communication procedures.

( ) Indicates reference to NFPA 1001.

This page intentionally left blank.

Section: Sprinkler Systems (NFPA 1001, 3-16 and 4-16)

Goal Statement: On completion of this subject, the student will fulfill the following objectives.

1. Identify and operate the main drain and main control valve on an automatic sprinkler system.

2. Identify the dangers associated with the premature closure of the sprinkler main control valve.

3. Identify the problems associated with both the automatic sprinkler system and fireground water flow when they are from the same water source.

4. Identify at least three sources of water for supply to an automatic sprinkler system.

5. Identify the following:

   5.1 Wet sprinkler system

   5.2 Dry sprinkler system

   5.3 Deluge sprinkler system.

6. Demonstrate proper method of replacing a sprinkler head.

( ) Indicates reference to NFPA 1001.

Sprinkler Systems Sample Practical Exam

1. Connect hose lines to pump and installed fire sprinkler system.
   a. Make proper selection of device.
   b. Break caps, if necessary.
   c. Check for obstructions.
   d. Check gasket.
   e. Make connection. At least 100 ft of hose should be used.
   f. Straighten out hose line.
2. Demonstrate the proven method of replacing a sprinkler head.
3. The firefighter must stop the flow of water from an activated sprinkler head with the water turned on.

Section: Salvage (NFPA 1001, 3-17)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify the purpose of salvage and its value to the public and the fire department.

2. Identify the three values of good salvage practices when salvage operations begin in the firefighting sequence:

   a. In public relations
   b. To the building owner
   c. As it relates to firefighting.

3. Given salvage equipment, demonstrate the ability to protect both stationary and movable property from damage.

4. Demonstrate the covering or closing of openings made during firefighting operations.

( ) Indicates reference to NFPA 1001.

Salvage Sample Practical Exam, Part 1

One-Person Fold or Roll

1. Make designated roll or fold:

   a. One person roll
   b. One person fold.

2. Arrange materials to be covered correctly.

3. Carry and position salvage cover correctly.

4. Spread cover correctly:

   a. Roll
   b. Fold.

Two-Person Fold

1. Make two-person fold.

2. Arrange materials to be covered correctly.

3. Carry and position salvage cover correctly.

4. Spread cover correctly:

   a. Balloon throw
   b. Single-edge snap throw
   c. Double-edge snap throw
   d. Cross-over throw.

Specialized Salvage Operations

1. Construct catch-alls correctly.

2. Construct chutes correctly:

   a. Correct direction for water flow
   b. Splices cover correctly.

3. Construct dike correctly.

4. Construct bag-all correctly.

Salvage Sample Practical Exam, Part 2

In this evaluation, the candidate will be evaluated on his/her ability to function within a team and individually perform various salvage cover operations. The evaluator will select five of the rolls, folds, or usages below.

Rolls

1. One-person spread.

Folds

1. One-person spread.
2. Two-person spread.

Usages

1. One-person spread from roll.
2. One-person spread from fold.
3. Two-person spread from fold.
4. Water chute downstairs.
5. Water chute using pike poles.
6. Dikes.
7. Floor runner.

This page intentionally left blank.

Section: Fire Inspections (NFPA 1001, 3-19 and 4-19)

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify the common causes of fires and their prevention.
2. Identify the fire inspection procedures.
3. Define the importance of public relations relative to the inspection programs.
4. Define dwelling inspection procedures.
5. Prepare surveys of buildings to record the location of items of concern during prefire planning operations.
6. Collect and record, in writing, information required for preparing a report on a building inspection or survey.
7. Identify building exit drill procedures.
8. Identify life safety programs for the home.
9. Identify common fire hazards and make recommendations for their correction.

( ) Indicates reference to NFPA 1001.

This page intentionally left blank.

Section: Fire Cause and Origin [IFSTA - Fire Cause Determination, Chapters 5-7]

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Identify responsibilities of the firefighter in determining fire cause and its point of origin.

2. Identify the importance of their responsibility in the protection of evidence at a fire scene.

[ ] Indicates reference to IFSTA Training Manual.

This page intentionally left blank.

Section: Hazardous Materials

Goal Statement: On completion of this subject, the student must fulfill the following objectives.

1. Safety

   1.1 Describe how HAZMAT incidents are different from other emergencies.

   1.2 Describe at least six ways HAZMAT is harmful to people at HAZMAT incidents.

   1.3 Describe the general routes of entry for human exposure to HAZMAT.

   1.4 Describe the limitations of street clothes or work uniforms at the scene of HAZMAT incidents.

   1.5 Describe the threats posed to property and the environment by HAZMAT releases.

   1.6 Describe precautions necessary when rendering emergency medical care to victims of HAZMAT incidents.

   1.7 Identify typical ignition sources found at the scene of HAZMAT incidents.

   1.8 Define the following chemical and physical properties.

      a. Boiling point
      b. Flash point
      c. Specific gravity
      d. Vapor density
      e. Water solubility.

2. Resources and planning

   2.1 Describe the local procedures for requesting additional resources for dealing with HAZMAT incidents.

   2.2 Describe the role of the first responder at the scene of a HAZMAT incident, as identified in the local contingency plan for HAZMAT incidents.

3. Incident management

   3.1 Describe the purpose, need, and benefits of an Incident Command System at the scene of a HAZMAT incident.

   3.2 Describe the process for implementing the Incident Command System at HAZMAT emergencies.

   3.3 Describe the basic techniques used to deny site entry.

3.4 Describe the basic techniques used to isolate the immediate site.

3.5 Describe the techniques for evacuation in HAZMAT incidents.

4. Recognition of HAZMAT

4.1 Given a list of nine HAZMAT classes, describe the primary hazards of each class and give examples of each.

4.2 Use the six groups of clues to detect the presence of HAZMAT.

4.3 Identify typical locations on the site or facility where HAZMAT is manufactured, transported, stored, used, or disposed of.

4.4 Describe placards, labels, and shipping papers used in the transportation of HAZMAT and explain their advantages and limitations in recognizing HAZMAT.

4.5 Identify the shipping papers found in various modes of transportation, the individuals responsible for the papers, and the location where carried and found during an incident.

4.6 Given various examples of containers and packaging, identify the containers and packages by name and give an example of the materials that may typically be found inside.

4.7 Describe the types of specialized marking systems found at fixed facilities (such as military or special hazard communication markings [NFPA 704]).

5. Classification, identification, and verification

5.1 Define HAZMAT.

5.2 Identify the specific name of HAZMAT involved in an emergency, or at least classify the material by its primary hazard using container markings, placards, labels, pesticide labeling, shipping papers, MSDSs, or personal contacts.

5.3 Identify three sources of obtaining response information about HAZMAT and describe the types of information provided in each.

5.4 Demonstrate the use of the DOT *Emergency Response Guidebook* [ERG] *1990: Guidebook for First Response to Hazardous Material Incidents* in assessing hazards and response actions, and determining isolation and evacuation distances.

5.5 Demonstrate the use of an MSDS in obtaining hazard and response information in an emergency.

5.6 Explain the difficulties encountered in identifying the specific name of HAZMAT and its hazard and response information in an

emergency.

5.7 Describe the risk associated with HAZMAT located and transported through the community or facility and its potential threat to people, property, or the environment.

This page intentionally left blank.

APPENDIX H

PREFIRE PLANS

This page intentionally left blank.

CONTENTS

This page intentionally left blank.

APPENDIX H

H.1 FIRE DRILLS

There are two aspects of fire drills that should be addressed in the fire department and emergency response program. First, fire drills are required to be conducted in several occupancies per National Fire Protection Association (NFPA) 101. The program should discuss these drills and which buildings are required to have drills to satisfy this requirement. The other aspect are fire drills that are performed within the fire department and emergency response organization for training purposes. All the drills should be documented and critiqued. The drills should be coordinated with the fire and emergency response department.

H.2 SALVAGE PLANS

General salvage plans should be in place for post firefighting activities. For those facilities where added precautions must be taken due to the facility contents, e.g. computer equipment, the plan should be expanded to include the specific actions to be taken to reduce equipment damage and downtime.

H.3 PREFIRE PLANS

Prefire plans should be developed for all facilities, although their length and detail may vary depending on the facility's size and complexity. The prefire plans should be updated on a regular schedule to ensure firefighters are kept abreast of any changes to the facilities. NFPA 13E should be used to assist in developing the plans. Since there is no mandated schedule for updating prefire plans, one may consider using the same frequency required for facility fire protection appraisals as required in U.S. Department of Energy (DOE) 5480.7A, or a modified frequency of 1 year, 3 years, and 5 years may be more appropriate for these plans. Provided below is an example of how this requirement could be implemented as well as an example of what a prefire plan should include.

Prefire plans will be performed for facilities based on the following frequency:

- Annually for facilities having a replacement cost value (including contents) $\geq$ $50 million.
- Every 2 years for facilities having a replacement cost value (including contents) from $10 million to $50 million.
- Every 3 years for facilities having a replacement cost value (including contents) < $10 million.

The prefire plans shall address the following items as a minimum:

- Building occupancy
- Special hazards
- Fire protection systems provided for the building
- Location of fire hydrants
- Location of fire department connections (FDC)
- Water supply available
- Exposures
- Plan of attack

H.3.1 Writing Prefire Plans

FRONT PAGE

Building:

If the plan is for multiple buildings sharing a common alarm system, list all involved buildings.

Box No:

If there is more than one box on the building, all box numbers should be listed. Annunciator panel locations should also be listed.

Special Hazards:

This is very important information and efforts should be made to ensure that all special hazards are listed. Examples would include physical hazards, such as radioactive sources; chemical hazards (hazardous material [HAZMAT]); and configuration hazards, such as pits with low oxygen content.

Exposures:

This should be a list of any buildings and/or other exposures that might possibly be affected in an emergency situation.

Special Exposures:

Included in this category would be anything that increases hazard potential, such as propane tanks, contaminated structures with a high possibility of particle releases to the atmosphere, transformers, polychlorinated biphenyls (PCB), overhead power lines, HAZMAT, hazardous waste, etc.

Equipment Response:

Note what equipment would normally respond to alarms in this facility, as well as any special equipment that might be needed. Also list backup equipment for second alarm response.

Electrical Disconnect:

Note the location of the MAIN electrical disconnect on the building. Its location should also be pinpointed on the building floor plan.

Nearest Hydrant:

Give the hydrant number, direction and distance from the building, and show all hydrants on the area plan.

Water Available:

Document the water supply available.

Type of Automatic Alarm Systems:

This section may be general or deleted since the same information is listed in greater detail under Annunciator and/or Fire Zones.

Sprinkler Systems:

If applicable, describe the type of sprinkler systems in the building.

Composition of Facility:

Provide a description of the construction of the building.

Plan of Attack:

This will vary from plan to plan. This section should include where each fire engine is to be located, and any special information necessary for attacking fires in the building. Areas that are difficult to access should be noted also.

If information is needed for special access information, such as key location or the need to notify a certain individual to gain access, this should be noted here. If any special notifications are required, this should also be listed.

Entry:

The entry section should include a list of <u>all</u> entrances to the building. If a special key is needed or if a particular person needs to be notified to gain access, that should be listed here. Types of entries should be listed, such as a 12-ft rollup door or a 3-ft personnel door. A recommendation should be included as to what door would provide the best access to the building under emergency conditions. Approach this section as if you had very little personal knowledge of the building and had to decide how to enter the building based on what is written in the plan.

Electrical Service and Hazards:

Voltage of the electrical service in the building should be listed as well as locations of main electrical disconnects. Any special hazards, such as extremely high voltage or battery rooms, should also be noted.

Radiation and Contamination:

Areas that are contaminated should be listed here in such a manner that they can be identified from the floor plan. Types of contamination should be identified, such as airborne, surface, etc. Radioactive sources contained in the building should also be noted. If special firefighting techniques need to be used, that information should also be listed (i.e., no water, or water fog only areas).

Toxic Gases and Hazardous Chemicals:

Note locations and types of gases and chemicals. Any special precautions to be taken because of such gases or chemicals also need to be listed. If antidotes are necessary to offset effects of chemicals, or special cleanup methods are required, this information should be included. Any HAZMAT problems should be listed here in detail, along with product names, manufacturers, etc. where practical.

Protective Clothing:

Types of clothing required for emergency entry, such as bunker gear, bunker gear with air pack, HAZMAT suits, etc. should be listed here. Minimum clothing requirements include full bunker gear and self-contained breathing apparatus (SCBA) for all building entries anytime the cause of alarm is not known.

Rescue:

If there are any special considerations to take into account in a rescue situation, they should be listed here. Examples could include pits with low oxygen content, extremely high radiation areas, difficult to enter places, confined space areas, etc. Do not be concerned about repeating information found in other sections of the plan. Someone using the plan should be able to locate information they need in any category. For example, high radiation areas can be listed both here and in the Radiation and Contamination section.

Extinguishment:

Any unusual materials or methods required for extinguishment should be listed here. Examples include: water fog only, or dry-chemical only. If there are no unusual requirements, simply state that all agents are acceptable.

Combustibles:

Classes of combustibles may be listed, particularly if they include unusual types, such as flammable metals. Other combustibles not normally found in buildings, such as solvents in quantity and flammable liquids, should be noted here. It is NOT necessary to list normal cleaning agents and thinners unless they are present in unusual quantities, such as paint storage warehouses, or janitorial supply warehouses.

Ventilation:

Recommended ventilation methods should be listed here. For example, in many contaminated buildings, ventilation should be through the building system if possible, to filter out all radioactive particles. This needs to be noted here. Another example would be whether or not the building ventilation automatically shuts down when an alarm is activated. Any other unusual ventilation requirements should also be listed in this section.

Salvage Operations:

High-value equipment that can be removed from the building or protected in a fire situation should be listed in this section. Also included might be sensitive files and/or irreplaceable paperwork. Building administrators and managers are good sources for this information. If no special information is necessary, simply list that normal salvage operations are required.

Fire Detection and Protective Equipment:

Types of systems, their location, riser numbers, and other pertinent information, should be noted in this section. Specific details as to what areas of the building they cover can go in Annunciator and/or Fire Zones, but locations of risers, drain valves (particularly on dry systems), inspector's test valves, FDCs, etc. should be listed. These should also be noted on the building floor plan. Any unusual protective equipment, such as Halon[1] systems, foam systems, and carbon dioxide (CO_2) systems, needs to be listed here.

Heating and Ventilation:

List the types of heating and ventilation systems such as heat pumps, gas, and steam. If special operating instructions for ventilation systems are necessary, describe them here, or explain where to locate them. Anything unusual that might be pertinent to a fire situation should be noted, such as gas shutoff location, heating, ventilation, and air conditioning (HVAC) reset, or bypass location.

[1]Halon is a trademark of Allied Chemical Corporation.

Annunciator and/or Fire Zones:

This section should list each zone and what areas of the building are covered. It should also tell what types of detection systems are in each zone. This information should also be on building maps. An example would be:

Zone 1 - Covers office wing of building. Sprinklers from riser one cover the section and auxiliary boxes are also in the zone, one by each exterior door. (See map).

H.3.2 Miscellaneous Information

Area maps should be included with all prefire plans. These should show all pertinent details, including hydrant location, radio box location, and annunciator panel. Floor plans should be attached, if available. Sprinkler system locations and FDCs should also be listed.

FACILITY PREFIRE PLAN

Building No.: 224-U Master Box No.: 2960

C Platoon Area: 200W Date: March 1991

WP MC Entered Contractor: WHC Th: X F: Year: 1994

Occupancy: UO_3

Special Hazards:

Exposures: 224-UA, 277-U, 222-U, 203-UX, 2715-U, 2715-UA

Special Exposures: 2300 V transformer bank at the southeast end of building

Equipment Response: Fire engine 2, Fire engine 1, Unit 3, HAZMAT 1, if chemicals involved

Location of Electrical Disconnect:

Nearest Hydrant: U-3 - 85 ft

Water Available: 2,000 gpm sanitary
Type of Automatic Alarm Systems: ????
2,000 gpm raw water

Sprinkler Systems: Wet pipe and deluge

COMPOSITION OF FACILITY

Length: 200 ft Width: 87 ft, SE end/61 ft, NE end Height: 52-ft
Type Construction: Steel and concrete Framing: Steel and concrete and transite Interio
Partitions: Concrete block and metal Exterior Covering: Concrete
Roof Construction: Concrete Roof Covering: Tar and gravel

PLAN OF ATTACK

First company will respond west of building and conduct size-up to ascertain correction location of fire. Second company will respond west of building and stand by until notified of desired hose lay or lays. Due to arrangement of the building, correct hose lays cannot be executed without information from the first company.

_____
Building Management Representative

_____
Fire Department Officer's Concurrence

1. ENTRY

There are numerous doorways on the first level. There are six on the northwest side of the structure and seven on the southeast side. One doorway exists on both southwest and northeast ends of the building.

2. ELECTRICAL SERVICE and HAZARDS

There is a 2300-V transformer bank at the southwest end of the building. The southwest end of the second floor contains a small transformer and switch gear. Also, on the second floor near the switchgear room is a battery backup room. The third floor has a control panel for all operations. Fan room and major switchgear panels are located centrally on the first floor.

3. RADIATION - CONTAMINATION

There is radiation and contamination in all cell areas and in the storage and scale room. Mostly low levels in these areas.

4. TOXIC GASES - HAZARDOUS CHEMICALS

There is a phosphoric acid and sulfuric acid pumping room on the second floor of the building. Also the 203-UX tanks on the south side of the building contain uranium nitrate hexahydrate (UNH). The 203-U tanks have three tanks containing UNH, one tank containing dilute nitric acid, and one tank with potassium hydroxide (caustic).

5. PROTECTIVE CLOTHING

Firefighters' turnouts plus Scott air masks.

6. RESCUE

Upper limits of the building rescue would be done by rope sling or stairwells. Normal rescue procedures would prevail on the first floor.

7. EXTINGUISHMENT

Water is acceptable in all parts of the building. Use caution where high voltage may be present. May use HAZMAT team in chemical related situations.

8. COMBUSTIBLES

Class "A", "B", and "C" material may be found.

9. VENTILATION

This would best be accomplished through the building ventilation system and exhaust system. Smoke ejectors and doors may be used. There are no windows in this structure.

10. SALVAGE OPERATIONS

Normal salvage operations will apply.

11. FIRE DETECTION AND PROTECTION EQUIPMENT

The building is protected by wet pipe sprinkler system, smoke detectors, and auxiliary boxes. The transformer bank outside the northwest end of the building is protected by a dry pipe deluge system. The main wet pipe sprinkler system is located in the second office to the left from the main entrance. The inspector's test valves for the wet pipe are located at these places: first floor at system, second floor northeast end of building, and third floor at northeast end of building.

At the northwest end of the building is a deluge system located in the scale room by the special work permit (SWP) lobby. This system covers the transformers at the northwest end of the building.

12. HEATING AND VENTILATION

The building is heated by steam. There is a ventilating system and duct work on all floors with exhaust louvers on each floor level. Ventilating system is not an automatic shutdown-type system connected into the alarm system in the building. This is a new alarm system.

13. ANNUNCIATOR AND/OR FIRE ZONES

Zone 1 - Postindicator valve (PIV) tamper

Zone 2 - 1st floor - Three auxiliary boxes are located at the following places: the panel, the men's SWP change room, and the complex south end. This area also covered by sprinkler 8.

Zone 3 - 1st floor loading room.

Zone 4 - 2nd floor - Two smoke detectors are located in the south end electrical room, one auxiliary box in the north end by the stairs, and one auxiliary box at the south end by the stairs. The area is also sprinklered.

Zone 5 - 3rd floor - Five smoke detectors: 1) south end, 2) south end middle, 3) north end middle, 4) north end middle, and 5) north end. The area is also sprinklered.

Zone 6 - Roof--antifreeze loops flow switch and hoseline.

Zone 7 - Deluge for transformers.

Zone 8 - Pressure switch on wet pipe sprinkler system.

Zone 9 - Duct work 1st floor--one smoke detector above main entry.

H.4 PHYSICAL FITNESS PROGRAM

The physical fitness program for firefighters and emergency personnel must be consistent with the applicable NFPA Standards and should be tailored to meet the specific requirements unique to the site. Training records must be maintained for each person. Following is an example of a physical fitness policy and program.

FITNESS POLICY AND PROGRAM

1.0 PURPOSE

1.1 To establish and implement an ongoing program of physical exercise and health education that will promote improved physical agility, endurance, and mental alertness of members for the safe and sound performance of their duties.

1.2 To develop and implement an evaluation process that will determine the physical fitness level of members of the Fire Department and that will monitor the progression of change in each member's level of fitness.

1.3 To establish physical fitness guidelines.

1.4 To develop personally designed schedules of progress for members to meet their individual goals.

1.5 To provide the means for members to improve and maintain their physical fitness and well being.

2.0 ORGANIZATION AFFECTED

2.1 The Fire Department

3.0 REFERENCES

3.1 Fire departments
Arlington, VA
Bellevue, WA
Dade County, FL
Fairfax, VA
Los Angeles, CA
Phoenix, AZ
San Francisco, CA
Seattle, WA
Spokane, WA
U.S. Forest Service

3.2 Other references

Allsen, Harrison, Vance; *Fitness for Life*, 2nd Edition, Wm. C. Brown Co., 1980.

Astrand, Per-Olaf, M.D., *Work Tests with the Bicycle Ergometer*.

Cooper, Kenneth, *The Aerobics Way*, Lippincott Co., Philadelphia, 1982.

4.0 PROGRAM SPECIFICS

4.1 Body fat analysis: Using the caliper method. Interim body fat assessments may be performed using the tape measure method.

4.2 Strength, endurance and flexibility:

Push-ups	Sit and reach
Curl-ups	Arm hang

4.3 Health risk appraisal: Individuals are free to use the appraisal at any time.

4.4 Exercise prescription: Each participant being evaluated will be categorized according to performance by age and sex. After the fitness level is determined, the areas in need of improvement will be identified. On request, a goal (exercise prescription) will be set up for the individual to work towards. The exercise prescription is purely optional and will in no way cause job jeopardy for that individual.

4.5 Following their yearly physical examinations, an annual Fitness Evaluation will be given to all participants that exercise during their duty day. The fitness specialist or trained volunteers will administer the evaluations. Training consists of a fitness orientation given by the fitness specialist. Results from the evaluations will be tracked and kept confidential on request by the participants. Departmental progress will be tracked but NO NAMES WILL BE USED FOR THESE REPORTS.

4.6 The annual fitness evaluation shall consist of the same items as the initial fitness evaluation, with the following additional cardiovascular evaluation options:

4.6.1 National Fitness Test 3-Minute Bench Step.

4.6.2 Astrand Submaximal Bicycle Test.

Administered by fitness specialist only.

4.6.3 National Fitness Test 1 1/2 mile Run.

Administered by the fitness specialist only. The participant must have had a recent Astrand Submaximal Bicycle Ergometer Test, scoring at least 30 ml/kg.min.02 and have a special physician approval to take the test.

4.6.4 National Fitness Test 3-mile Walk.

This can be administered during the annual fitness evaluation by the fitness specialist or trained personnel in place of the other cardiovascular evaluations offered.

4.6.5 Treadmill Test

The tread mill test will be administered by one of the local cardiologists, on request, and will be paid for by the fire department. This test is limited to those 35 years or older, or to those having a family history of heart disease.

4.6.7 All personnel who have been through the Fitness Equipment Orientation will be issued a pair of sweatsuits, on request and when available.

4.6.8 All fire department personnel shall be given, on request, a copy of the Physical Fitness Manual.

5.0 GENERAL RULES

5.1 In case of an alarm, all personnel will take their assigned positions on the various fire engine.

5.2 Other fitness activities may be approved, but those requesting them should submit them to the fitness committee for evaluation.

5.3 Training, classes, emergencies, work requirements, and unusual circumstances will supersede the exercise period.

5.4 The exercise period will include shower time, if needed. Those participating will be ready to work at the end of the exercise period. (This does not apply to Platoon personnel exercising from 3:00 p.m. to 4:00 p.m.)

5.5 Participation will be voluntary for all members. There will be no job jeopardy involved in failure to meet the goals.

5.6 Those members not exercising during their work day (8-4 p.m. for Platoon; 7 a.m.-5 p.m. for Testing and Services) will be expected to take up the regular station duties, including radio watches and box maintenance, although there will be no make-work-type activities assigned to punish those who choose not to participate.

5.7 Personnel working overtime are not allowed to exercise during their work day. The only exception is for fire fighters who are on suppression holdovers to meet the minimum personnel requirements.

5.8 Participants may use their own exercise accessories, but are not allowed to use their own personal exercise equipment. For clarification on these items, please contact the fitness specialist or a fitness committee member.

6.0 RESPONSIBILITIES

6.1 Tracking

a. Individual log--each participant will be issued an exercise card to track their individual workouts.

b. Shift log--each shift captain will fill out a weekly participation log for each participant and will tally and submit the total hours for recording in the monthly report.

c. Department log--the fitness specialist will tally the monthly, quarterly, semiannual, and annual report on participation for the fire department.

d. Annual fitness evaluation--The fitness specialist or trained personnel will administer the annual fitness evaluation to those participating during their work day.

e. Annual fitness orientation--The fitness specialist will conduct annual fitness orientations for all participants.

H.5 HAZARDOUS MATERIAL PROGRAM

The HAZMAT program should comply with Occupational Safety and Health Administration (OSHA) 1910.120, NFPA 472, and Department of Transportation (DOT) requirements. When developing a HAZMAT program, special attention should be given to coordinating with the other disciplines that may be required to support the program, or who may be directly affected by an emergency response (e.g. Site Patrol). Provided below is a reference manual that may be helpful in accomplishing this task.

The attached instructional objectives and learning outcomes have been prepared to support educational activities designed to train DOE fire service personnel to the DOT HAZMAT First Responder level. Each objective is a statement of the skills and/or body of knowledge a person must achieve to attain this level of competence.

The International Fire Service Training Association (IFSTA) HAZMAT First Responder Manual shall be used as the textbook for this course. Selected reading assignments may be made to supplement classroom instruction, and the students shall be responsible for all material in this manual.

Written examinations, daily quizzes, and performance evaluations shall be correlated to specific objectives. The final practical and written examinations shall be given by the agency providing the training. A score of 70% or greater is required to pass the written and practical exams. If a person fails either the written or practical exam, they may retake the exam no sooner than 14 days after the exam was taken. If the exam is failed a second time, the student shall retake the class before being allowed to take the exam a third time. Anyone failing the exam a third time shall not be certified as a DOE firefighter. The results of the exam shall become a permanent part of the firefighter's training record.

A complete instructor's manual including daily lesson plans, overheads, quizzes, and final exams is available for a minimal fee from the Illinois Fire Service Institute in Champaign, Illinois. The organization presenting the 40-hour training course also has the option of preparing their own package for the program.

Section: Awareness

Goal Statement: On completion of this section, the student will fulfill the following objectives.

1. Describe how HAZMAT incidents are different from other emergencies.

2. Describe at least six ways HAZMAT is harmful to people at HAZMAT incidents.

3. Describe the general routes of entry for human exposure to HAZMAT.

4. Describe the limitations of street clothes or work uniforms at the scene of HAZMAT incidents.

5. Describe the threats posed to property and the environment by HAZMAT releases.

6. Describe precautions necessary when rendering emergency medical care to victims of HAZMAT incidents.

7. Identify typical ignition sources found at the scene of HAZMAT incidents.

8. Describe the local procedures for requesting additional resources for dealing with HAZMAT incidents.

9. Describe the role of the first responder at the scene of a HAZMAT incident, as identified in the local contingency plan for HAZMAT incidents.

10. Describe the purpose, need, and benefits of an Incident Command System at the scene of a HAZMAT incident.

11. Describe the process for implementing the Incident Command System at HAZMAT emergencies.

12. Describe the basic techniques used to deny site entry.

13. Describe the basic techniques used to isolate the immediate site.

14. Describe the techniques for evacuation in HAZMAT incidents.

15. List the nine HAZMAT classes, describe the primary hazards of each class, and give examples of each.

16. Use the six groups of clues to detect the presence of HAZMAT.

17. Identify typical locations in the community or facility where HAZMAT is manufactured, transported, stored, used, or disposed of.

18. Describe placards, labels, and shipping papers used in the

transportation of HAZMAT and explain their advantages and limitations in recognizing HAZMAT.

19. Identify the shipping papers found in various modes of transportation, the individuals responsible for the papers, and the location where carried and found during an incident.

20. Given various examples of containers and packaging, identify the containers and packages by name, and give an example of the materials that may typically be found inside.

21. Describe the types of specialized marking systems found at fixed facilities (such as military, special hazard communication markings, and NFPA 704).

22. Define HAZMAT.

23. Identify the specific name of HAZMAT involved in an emergency or at least classify the material by its primary hazard using container markings, placards, labels, pesticide labeling, shipping papers, Material Safety Data Sheets (MSDS), or personal contacts.

24. Identify three sources of obtaining response information about HAZMAT and describe the types of information provided in each.

25. Demonstrate the use of the DOT *Emergency Response Guidebook 1990: Guidebook for First Response to Hazardous Material Incidents* in assessing the hazards and response actions and determining isolation and evacuation distances.

26. Demonstrate the use of an MSDS in obtaining hazard and response information in an emergency.

27. Explain the difficulties encountered in identifying the specific name of HAZMAT and their hazard and response information in an emergency.

28. Describe the risk associated with HAZMAT located and transported through the community or facility and its potential threat to people, property, or the environment.

Section: Operations

Goal Statement: On completion of this section, the student will fulfill the following objectives.

1. Describe the importance of the buddy system in controlling HAZMAT incidents.

2. Identify the advantages and dangers of search and rescue missions at HAZMAT incidents.

3. Identify the advantages and hazards associated with the rescue, extrication, and removal of a victim from a HAZMAT incident.

4. Describe the precautions to be taken to protect oneself when fighting fires involving HAZMAT.

5. Define BLEVE [boiling liquid expanding vapor explosion] and describe what happens to the container when a BLEVE occurs and how a BLEVE can be prevented.

6. Describe when it may be prudent to pull back from a HAZMAT incident.

7. Describe the hazards and precautions to be observed when approaching a HAZMAT incident.

8. Describe the levels of HAZMAT incidents and incident responders identified in the local contingency plan.

9. Describe the need for a HAZMAT response plan and describe the major elements of the plan.

10. Describe the importance of coordinating between various agencies at the scene of HAZMAT incidents.

11. Describe the importance of preemergency planning related to specific sites.

12. Describe the elements of the Incident Command System to ensure coordination of response activities at HAZMAT incidents.

13. Given a simulated HAZMAT incident, demonstrate the ability to

    a. Assume command
    b. Establish scene control through control zones
    c. Establish a command post.

14. Identify the criteria for determining the location of the control zones for a HAZMAT incident.

15. Describe your organization's standard operating procedures relating to HAZMAT.

16. Given a pesticide label, identify and explain the significance of the following:

    a. Name of pesticide
    b. Signal word
    c. EPA registration number
    d. Precautionary statement
    e. Hazard statement
    f. Active ingredient.

17. Describe the assistance provided by a chemical transportation emergency center (CHEMTREC), how to contact CHEMTREC, and what information the first responder should furnish CHEMTREC.

18. Given an MSDS, select and interpret information that is useful in determining the hazards of the chemical.

19. Define the following chemical and physical properties and describe their importance in the risk assessment process:

    a. Boiling point
    b. Flammable or explosive limits
    c. Flash point
    d. Ignition or autoignition limits
    e. Specific gravity
    f. Vapor density
    g. Vapor pressure
    h. Water solubility.

20. Define the following terms:

    a. Alpha radiation
    b. Beta radiation
    c. Gamma radiation.

21. Identify the physical requirements of the wearer of an SCBA.

22. Describe the limitations of personnel working with an SCBA.

23. List the types of SCBA and describe the advantages and limitations of each at HAZMAT incidents.

24. Identify the procedure for cleaning and sanitizing SCBA for future use.

25. Identify the operational components of the types of SCBA provided by the authority having jurisdiction (AHJ) and explain their function.

26. Describe the need for specialized protective clothing used at HAZMAT incidents.

27. Describe the application, use, and limitations of the following levels of protective clothing used at HAZMAT incidents:

    a. Structural firefighting clothing
    b. Nonencapsulating chemical protective clothing
    c. Encapsulating chemical protective clothing
    d. High temperature clothing.

28. Demonstrate the proper donning, doffing, and use of all personal protective equipment provided to the first responder by the AHJ for use in normal response activities.

29. Describe the factors to be considered in the selection of the proper respiratory protection at HAZMAT incidents.

30. Describe the techniques for controlling HAZMAT releases available to the first responder.

31. Describe the need of decontamination procedures at HAZMAT incidents.

32. Describe the ways that personnel, personal protective equipment, apparatus, tools, and equipment become contaminated and the importance and limitations of decontamination procedures.

33. Demonstrate the basic decontamination procedures as defined by the AHJ for victims, personnel, personal protective equipment, tools, equipment, and apparatus at HAZMAT incidents.

34. Describe the importance of documentation for a HAZMAT incident including training records, exposure records, intent reports, and critique reports.

35. Demonstrate the ability to keep an activity log and exposure records for HAZMAT incidents.

H.6 MUTUAL AID

Although it is not specifically required by a DOE directive, each site should evaluate their need for a mutual aid agreement with other local and community emergency response forces. This will ensure adequate equipment and personnel are available if conditions warrant additional resources beyond the capability of the site's department. Provided below is an example of a mutual aid agreement.

MUTUAL AID AGREEMENT

THIS AGREEMENT, made and entered into on this _____ day of _____ ___, 19___ by and between the cities of Richland, Kennewick, and Pasco and the Fire Protection Districts Benton County 1, Benton County 2, Benton County 3, Benton County 4, Benton County 5, Benton County 6, Franklin County 3, Walla Walla County 5, and the Hanford Fire Department.

WITNESSETH:

WHEREAS, each of the parties hereto maintains equipment and personnel for suppressing fires within its own jurisdiction and areas, and

WHEREAS, the parties hereto desire to augment the fire and emergency medical protection available in their various establishments, districts, agencies, and municipalities in the event of large fires, conflagrations, or other disaster, and

WHEREAS, the lands or districts of the parties hereto are adjacent or contiguous so that mutual assistance in a fire or medical emergency is deemed feasible, and

WHEREAS, it is the policy of the above municipalities or other districts and of their governing bodies to conclude such agreements wherever practicable, and

WHEREAS, it is mutually deemed sound, desirable, practicable, and beneficial for the parties to this agreement to render assistance to one another in accordance with these terms:

THEREFORE, BE IT AGREED THAT:

1. Whenever it is deemed advisable by the commanding officer of a fire department belonging to a party of this agreement, or by the commanding officer of any such fire department actually present at any fire or other emergency including any medical emergency, to request assistance under the terms of this agreement, the commanding officer is authorized to do so. The commanding officer, or authorized subordinates, of the department receiving the request shall immediately take the following actions.

A. Immediately determine if fire engine and personnel can be spared in response to the call.

B. Determine what fire engine and personnel might be most effectively dispatched.

C. Determine the exact mission to be assigned in accordance with the detailed plans and procedures of operation drawn in accordance with this agreement by the technical heads of the fire departments concerned.

D. Immediately dispatch such fire engine and personnel as, in the judgment of the responsible officer receiving the call, should be sent. Include complete instructions as to the mission, in accordance with the terms of this agreement.

2. The rendering of assistance under the terms of this agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting agency if, for any reason assistance cannot be rendered.

3. A. Each party to this agreement waives all claims against the other party or parties for compensating any loss, damage, personal injury, or death occurring in consequence of the performance of this agreement.

B. All service performed under this agreement shall be rendered without reimbursement of either party or parties.

4. The commanding officer of the fire department requesting assistance shall assume full charge of the operations. If the officer specifically requests a senior officer of a fire department furnishing assistance to command, the officer shall not, by relinquishing command, be relieved of the responsibility for the operation. This is providing that the fire engine, personnel, and equipment of the agency rendering assistance shall be under the immediate supervision of, and shall be the immediate responsibility of, the senior responding fire officer or the commanding officer of the department rendering assistance.

5. The chief fire officer and personnel of the fire departments of all parties to this agreement are invited and encouraged on a reciprocal basis to frequently visit each other's activities for guided familiarization tours. This should be consistent with local security requirements and, as feasible, to jointly conduct prefire planning inspections and drills.

6. The commanding officers of the fire departments of the parties to this agreement are authorized to meet and draft any detailed plans and procedures of operation necessary to effectively implement this

agreement. Such plans and procedures of operation shall become effective on ratification by the signatory parties.

7. This agreement shall become effective upon the date hereof and shall remain in full force and effect until canceled by mutual agreement of the parties hereto or by written notice from one party to the other party giving ten (10) days' notice of said cancellation.

8. SIGNATURES

_____

_____

_____

_____

H.7 BUILDING TOURS

Building tours are necessary to assist emergency response and fire department personnel in developing the prefire plans and to enhance building familiarity. The tours should be documented and performed annually on a minimum number of the total buildings at the site. The actual number of tours performed each year will vary depending on the size of the site, but the minimum goal should be at least 25% of the total number of buildings per year. Provided below is an example of a Building Tour Form that may be used for documentation and to assist in identifying problems while conducting the tour.

INSPECTION FORM

Code Compliance
Yes No N/A

MISCELLANEOUS

( ) ( ) ( ) Prefire plan posted
( ) ( ) ( ) Fire lanes properly posted and maintained (NFPA 1,3-1.1.10)
( ) ( ) ( ) Vacant buildings locked and barricaded (NFPA 1,3-1.1.9)
( ) ( ) ( ) Perimeter of building free of combustible materials (NFPA 1,3-1.1)

EXITS

( ) ( ) ( ) Ample in number (NFPA 1,3-4.1.1 and NFPA 101)
( ) ( ) ( ) Exit signs posted (NFPA 1,3-4.1.1 and NFPA 101)
( ) ( ) ( ) Stairway and hallway doors operable and unlocked (NFPA 1,3-4.1.1 and NFPA 101)
( ) ( ) ( ) Storage of combustible materials near exits (NFPA 1,3-4.1.1 and NFPA 10
( ) ( ) ( ) Exit access clear (NFPA 1,3-4.1.5)
( ) ( ) ( ) Emergency lighting operable (29 CFR 1910 b7)
( ) ( ) ( ) Nonexits clearly marked (29 CFR 1910 b4 and b6)

FIRE DOORS

( ) ( ) ( ) Closed and operable (NFPA 80, 15-1.2)

ELECTRICAL

( ) ( ) ( ) Main electrical shutoff (location_____)
( ) ( ) ( ) Proper use of small appliances, power cords, and outlets (NFPA 1,3-1.2.2)
( ) ( ) ( ) Proper location of above (NFPA 1,3-1.2.2)

ALARM OR DETECTION SYSTEMS

( ) ( ) ( ) Specify type _____

_____

FIRE ALARM CONTROL PANEL

( ) ( ) ( ) Accessible and locked
Location (zone no.) _____
RFAR Box No. _____

_____

STORAGE CONCERNS

Explanation _____

_____

EXTINGUISHERS

( ) ( ) ( ) Annual inspection performed (NFPA 10)
( ) ( ) ( ) Unobstructed from view or access (29 CFR 1910 d3)
( ) ( ) ( ) Located properly (NFPA 10)
( ) ( ) ( ) Has monthly inspection been completed? (NFPA 10)

SPRINKLER SYSTEM(s)

Type: Wet Dry Deluge Preaction
No. of _____ _____ _____ _____
Location(s) _____
( ) ( ) ( ) FDC accessible (NFPA 13)
( ) ( ) ( ) Hydrant(s) accessible

SPECIAL SUPPRESSION SYSTEMS

Type(s) _____

_____

Location(s) _____

_____

Comments _____

_____

_____

_____

Battalion Commander Signature _____

Fire Department Members Performing Inspection _____

_____

_____

_____

_____Note any hazardous conditions or concerns _____

_____

_____

_____

_____

_____

_____

_____

_____

Copy left with Building Manager Yes____ No____ N/A___

This page intentionally left blank.

H.8 EMERGENCY MEDICAL RESPONSE

If medical response is part of the organization's responsibility, a procedure should be prepared that explains the general actions that should be taken during a response. The following serves as an example.

When ambulance calls are received, the station officer and the ambulance crew are responsible for verifying the location with the radio operator before response. Two firefighters will respond on all ambulance runs. One of the two must be an EMT.

Ambulance reports must be filled out on all ambulance runs, even if no patient is transported. Information on these reports is considered confidential and should be released only to the proper authorities. Patients refusing treatment should sign the ambulance report to document the refusal. If the patient will not sign the form, note that information on the form.

Patient status information will be transmitted to the hospital by radio. In general, the EMT should transmit the information, although the nurse may perform this duty on request. Patient names must not be transmitted over the radio, although payroll numbers may be used, when necessary. Status information should include the following.

a. Description of accident or illness.

b. Severity or priority of information, i.e., immediately life threatening, urgent, or nonurgent.

c. Radiation concerns, if any.

d. Vital signs, to include: age, sex, mechanism of injury, blood pressure, pulse, respirations, level of consciousness, estimated time of arrival, and any other pertinent information.

e. Any medications or other compounds that may have contributed to the patient's illness. If possible, the bottle or container should be delivered to the hospital with the patient to aid in identifying the proper antidote.

Should an unattended death occur, the County coroner and the Sheriff's Office must be notified. Permission must also be obtained to move the body, except when medical personnel determine there may be a possibility of saving the victim. Transportation of deceased persons will be performed at the request of the county coroner.

H.9 INTERNAL OPERATIONAL HANDBOOK

An internal handbook is recommended to address the general conduct of operations within the fire department or emergency response organization. Provided below is an example of the types of items that could be addressed in the handbook.

Preface

1.0 General Information
- 1.1 Significant Organizational Changes
- 1.2 Officer Assignments
  - 1.2.1 Acting Lieutenant
- 1.3 Firefighter Assignments
  - 1.3.1 Hours of Work
  - 1.3.2 Requests for Transfer
  - 1.3.3 Station Assignments
- 1.4 Emergency Response
  - 1.4.1 Buildings
  - 1.4.2 Grass Fires
  - 1.4.3 Mutual Aid Response
  - 1.4.4 Fire Watch
- 1.5 Offsite Class Attendance
- 1.6 Building Tours
  - 1.6.1 Purpose
  - 1.6.2 Responsibilities
  - 1.6.3 Definitions
  - 1.6.4 Procedure
  - 1.6.5 Hazardous Facilities or Areas
- 1.7 Overtime Meals
- 1.8 Uniforms and Bunker Gear
  - 1.8.1 Uniforms
  - 1.8.2 Patches and Emblems
  - 1.8.3 Collar Insignia - Supervision
  - 1.8.4 Name Plates
  - 1.8.5 Breast Shield
  - 1.8.6 Ties
  - 1.8.7 Sweatsuits
  - 1.8.8 Hats and Caps
  - 1.8.9 Suspenders
  - 1.8.10 Shower Clogs
  - 1.8.11 Glasses Cases
  - 1.8.12 Belts and Shoes
  - 1.8.13 Requisitioning Uniforms, Equipment, and Supplies
- 1.9 Uniform Laundry and Repairs
- 1.10 Protective Clothing Inspections
- 1.11 Grooming Standards
- 1.12 Telephone Usage During Duty Hours

2.0 Safety
- 2.1 Occupational Safety and Health Committee
- 2.2 Critical Incident Stress Debriefing

2.3 Use of Portable Fire Shelters
2.3.1 Procedure for Use
2.4 Life Safety Rope, Harnesses, and Hardware
2.4.1 Life Safety Rope
2.4.2 Life Safety Harness
2.4.3 Hardware
2.5 Hazardous Waste Program
2.5.1 Purpose
2.5.2 Waste Minimization
2.5.3 Hazardous Waste and Materials Training
2.5.4 Waste Handling

3.0 Alarm Information
3.1 Responses to Other Projects
3.1.1 Purpose
3.1.2 Fire Procedures
3.1.2.1 Outside Power Block
3.1.2.2 Power Block
3.1.3 Fire Brigade
3.1.4 Response Termination
3.1.5 Alarm Restoration
3.1.6 Bomb Threats
3.1.7 Medical Emergency
3.1.8 Ambulance Response
3.1.8.1 Access
3.1.8.2 Emergency
3.1.8.3 Nonemergency
3.1.9 Exit Response to an Emergency
3.1.10 Training
3.1.11 Emergency Communications
3.1.12 Fire Incident Investigation
3.2 Bypassing Zones in FA Boxes
3.3 Restoring Panels During Battery Tests
3.4 Equipment
3.4.1 Personal Alert Safety System (PASS) Devices
3.4.2 Pocket Dosimeters
3.4.2.1 Using the PADI
3.4.2.1.1 Suppression Personnel
3.4.2.1.2 Testing and Services Personnel
3.4.2.2 When to Use the PADI
3.4.2.2.1 Suppression Personnel
3.4.2.2.2 Testing and Services Personnel
3.4.2.3 Tracking Procedures
3.4.2.3.1 Suppression Personnel
3.4.2.3.2 Testing and Services Personnel
3.4.2.4 Testing and Calibration of the PADIs
3.4.2.4.1 Suppression Personnel
3.4.2.4.2 Testing and Services Personnel
3.4.2.5 Calibration
3.4.3 Portable Radios
3.4.4 Video Cassette Recorders
3.4.5 Emergency Generators
3.4.5.1 Operation and Testing